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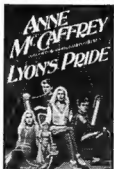
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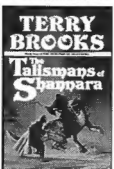
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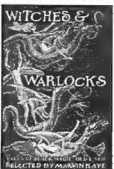
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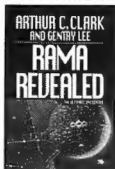
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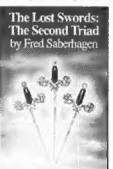
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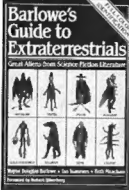


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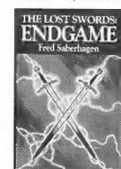


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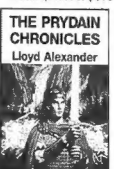
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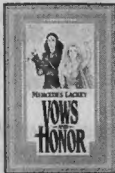
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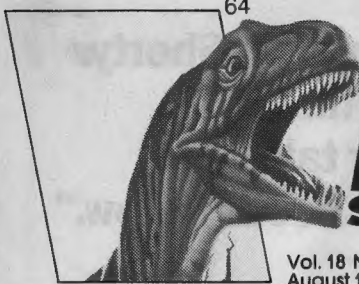
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SCIENCE FICTION

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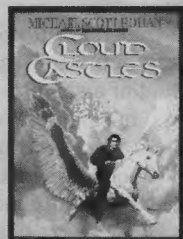


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REFLECTIONS by Robert Silverberg

Once again the scientists are way out ahead of the science-fiction writers. And once again the lay public is several light-years behind both groups, muttering that *There Are Some Things That Mankind Was Not Meant To Achieve*.

I'm talking about the latest startling new development in reproductive technology: specifically, the controversial proposal to transplant ovaries from aborted fetuses into infertile human women, ovaries containing fertile eggs that could develop into normal babies. So far as I know, none of our most ingenious science fictional thinkers ever came up with that one—neither Robert Heinlein nor John Varley nor Greg Bear, to name three writers whose books and stories are particularly rich in speculations located along the interface between society and technology.

But Dr. Roger Gosden, a scientist at Edinburgh University, has *already* performed fetus-to-adult ovary transplants on mice and brought forth living mice from the fertilized fetal eggs. He says that within three years he expects to be able to do the same thing with human fetal ovaries. The ovaries of a

ten-week-old human female fetus, Dr. Gosden points out, contain six or seven million eggs. If one of these ovaries were to be transplanted to an adult woman, it would need about a year to grow to mature size, after which it would begin producing fertile eggs. He has asked the ethics committee of the British Medical Association to offer an opinion on whether he should proceed with his research.

The British ethics committee's report will not be released for some time to come. But already intense reactions to Dr. Gosden's work are emerging.

"The idea is so grotesque as to be unbelievable," said George Annas, a lawyer and "ethicist" (a new philosophical specialty, apparently) at Boston University.

"It seems to me that it would be devastating to grow up knowing you were the product of a situation in which your mother was aborted," declared Dr. Arthur Caplan, a University of Minnesota ethicist. "There are many difficult things a child may have to deal with in life, but I just think we don't have any scale yet for someone to find out that they exist but their mother did not come into personhood."

And syndicated newspaper columnist Ellen Goodman weighed in with: "We need some ethical stop signs. One stop sign goes up at the idea of using fetal eggs at all. . . . Even if this technology does produce a picture-perfect baby for some couples, it's fair to ask how much we should sacrifice in moral and scientific terms for that portrait."

The immediate popular consensus was that the use of fetal ovary transplants to allow infertile women to become pregnant was bizarre, unnatural, weird, disturbing, frightening, and repellent. And we are only just at the beginning of the debate.

Let me offer an analogous situation.

A terrible contagious plague is ravaging the world. It spreads so easily that it strikes whole communities, killing many of its victims and leaving those who survive so hideously disfigured that they are often unwilling to let their faces be seen. No cure is known. But an obscure country doctor announces that he has found a method for injecting infectious fluid from lesions of a similar but much milder disease common among cows into the bodies of those who have not yet caught the plague—young children, for example. This practice, he says, will immunize those who receive it against the more virulent disease that everyone dreads.

What? Inject infectious material into the bodies of healthy babies? What a bizarre, unnatural, weird,

disturbing, frightening, and repellent thing to do! The process is condemned by journalists and medical experts alike; dire fears are expressed; cartoonists draw sketches of people sprouting cowhorns and talking in moos after they have been treated. But experiments continue all the same; and, behold, the dreaded plague is utterly wiped out.

That dreaded plague was smallpox; the country physician was Edward Jenner of Gloucestershire; the process he devised is called *vaccination* (from the Latin *vacca*, "cow"), and it has been close to two hundred years since anyone has seen anything grotesque or scary about injecting young children with cowpox virus to defend them against the related but far deadlier smallpox. What seemed like the wildest madness in the 1790s is routine medical practice throughout the world today.

But vaccination is one thing, you may say, and the artificial creation of human beings is something else entirely. We are talking, after all, about the sacred area of reproduction. Terms like "golem" and "android" and "Frankenstein's monster" quickly enter the discussion. And then comes the clincher: "It's—unnatural."

Sure. So is vaccination. So are eyeglasses. So is chemotherapy. So are heart transplants. None of those existed naturally in the world before we invented them. Adam and Eve had to make do without any of them. They are

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widely used and accepted all the same. Our definition of what is "unnatural," and therefore forbidden, keeps changing all the time.

In the field of reproductive technology, *in vitro* fertilization—an unnatural process if ever there was one—arrived in 1979, when Louise Brown was born. She was engendered by the meeting of her father's sperm and her mother's egg, yes, but the meeting took place not in her mother's womb but in a petri dish, after which the fertilized embryo of what would become Baby Louise was surgically implanted in her mother's uterus.

By now *in vitro* fertilization has become an established procedure when special conditions prevent a couple from having a child by conventional means. And in recent years we've also seen the impregnation of women past menopause—one was fifty-nine, one was sixty-two—with eggs fertilized by their own husbands but taken from the bodies of other women. We've seen women implanted with fertilized eggs from their own daughters and carrying them to term, thus giving birth to their own grandchildren. We've heard of cloning techniques that could soon enable parents to have identical twins or triplets born several years apart. Unnatural, every one. But, step by step, these outlandish science-fictional techniques are working their way into normal medical usage.

The fetal-ovary proposal stirs strange new emotional responses,

ROBERT SILVERBERG

though. Columnist Ellen Goodman wonders, "Will brain-dead or dying females become egg donors the way they are now kidney and liver donors?" Why not? I reply. If their eggs can be of as much use to some other person as their kidneys or livers, why waste them?

Ethicist George Annas asks, "Should we be creating children whose mother is a dead fetus? What do you tell a child? Your mother had to die so you could exist?" But that problem disappears if we distinguish between the genetic mother and the gestational mother. The child's maternal genes were contributed by someone who may herself never have existed in the usual sense of that word, yes; but that child then spent nine months within the real womb of a real mother, who would provide motherly nurturing for years to come.

That child will have had a living mother, though half its genetic complement will have come from another source. This seems no more unnatural to me than the process of artificial insemination, long accepted in our society. It is possible now for a woman to conceive a child using the sperm of a man who died years ago, or of one who is homosexual and has never had heterosexual intercourse. (The woman may never have had heterosexual intercourse either. I speak of lesbian mothers—not an unknown phenomenon today.) Unnatural? Certainly. Fulfilling the real human needs of the real hu-

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man beings involved? I have no doubt of that. Unfair to the child thus brought into the world? George Annas thinks so; but would the eagerly wanted child born through a fetal-ovary transplant prefer not to have been born at all?

We are at the threshold of the twenty-first century. One era's bizarre and unnatural technological development becomes the next one's standard practice. There are millions of people who desperately desire to have children and for one physiological reason or another are unable to bring them into the world in the natural way. Fetal-ovary transplants and post-menopausal pregnancies certainly seem strange and visionary even to me, and I have been a professional creator of strange visionary ideas for forty years. But I see a direct logical line leading from artificial insemination through *in vitro* fertilization to post-menopausal pregnancies and fetal-ovary transplants—and on beyond them to immensely more astonishing developments in this area in the centuries ahead.

There will be great outcry and anguish over the new reproductive

technologies, yes, much discussion of ethics and principles, and, maybe, even some hasty legislative action. But if the technical skills exist and the demand for their use is strong, and the real benefits of the new processes clearly outweigh the supposed ethical drawbacks, this entire debate will seem as quaint a couple of generations from now as the debate over smallpox vaccination in 1796 does now.

As for my own interest in all this: well, I am not by nature a parenting kind of guy, and I have no personal stake in seeing that fetal-ovary transplant technology is allowed to develop. But whenever I hear that line about *Some Things That Mankind Was Not Meant To Achieve*, I find myself asking, "Why?" and "By whom?" That was the line they gave Vesalius when he began dissecting corpses to find out what human anatomy was all about, and Galileo when he pointed his little telescope at the moons of Jupiter. It makes me uncomfortable to hear the old cliché trotted out once more, this time for Dr. Roger Gosden and his fellow explorers on the genetic frontier. ●

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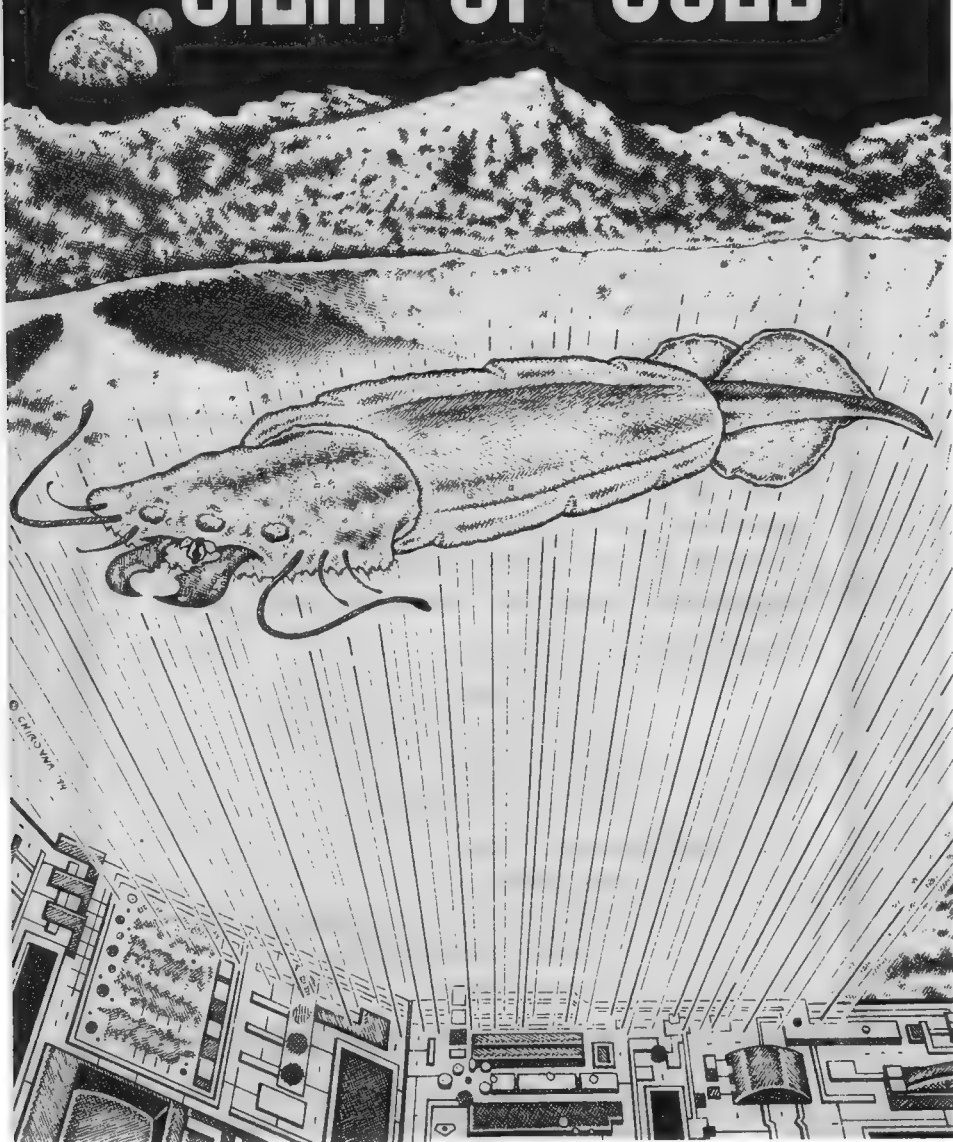
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Stephen Baxter

CILIA-OF-GOLD



Stephen Baxter's breathtaking new hard SF
tale is set against Mercury's austere beauty
and the tangled thoughts of an alien mind.

Illustration by Ron Chiranna



The people—though exhausted by the tunnel's cold—had rested long enough, Cilia-of-Gold decided.

Now it was time to fight.

She climbed up through the water, her flukes pulsing, and prepared to lead the group further along the Ice-tunnel to the new Chimney cavern.

But, even as the people rose from their browsing and crowded through the cold, stale water behind her, Cilia-of-Gold's resolve wavered. The Seeker was a heavy presence inside her. She could *feel* its tendrils wrapped around her stomach, and—she knew—its probes must already have penetrated her brain, her mind, her *self*.

With a beat of her flukes, she thrust her body along the tunnel. She couldn't afford to show weakness. Not now.

"Cilia-of-Gold."

A broad body, warm through the turbulent water, came pushing out of the crowd to bump against hers: it was Strong-Flukes, one of Cilia-of-Gold's Three-mates. Strong-Flukes's presence was immediately comforting. "Cilia-of-Gold. I know something's wrong."

Cilia-of-Gold thought of denying it; but she turned away, her depression deepening. "I couldn't expect to keep secrets from you. Do you think the others are aware?"

The hairlike cilia lining Strong-Flukes's belly barely vibrated as she spoke. "Only Ice-Born suspects something is wrong. And if she didn't, we'd have to tell her." Ice-Born was the third of Cilia-of-Gold's mates.

"I can't afford to be weak, Strong-Flukes. Not now."

As they swam together, Strong-Flukes flipped onto her back. Tunnel water filtered between Strong-Flukes's carapace and her body; her cilia flickered as they plucked particles of food from the stream and popped them into the multiple mouths along her belly. "Cilia-of-Gold," she said. "I *know* what's wrong. You're carrying a Seeker, aren't you?"

"... Yes. How could you tell?"

"I love you," Strong-Flukes said. "*That's* how I could tell."

The pain of Strong-Flukes's perception was as sharp, and unexpected, as the moment when Cilia-of-Gold had first detected the signs of the infestation in herself . . . and had realized, with horror, that her life must inevitably end in madness, in a purposeless scrabble into the Ice over the world. "It's still in its early stages, I think. It's like a huge heat, inside me. And I can feel it reaching into my mind. Oh, Strong-Flukes . . ."

"Fight it."

"I can't. I—"

"You can. You *must*."

The end of the tunnel was an encroaching disk of darkness; already

Cilia-of-Gold felt the inviting warmth of the Chimney-heated water in the cavern beyond.

This should have been the climax, the supreme moment of Cilia-of-Gold's life.

The group's old Chimney, with its fount of warm, rich water, was failing; and so they had to flee, and fight for a place in a new cavern.

That, or die.

It was Cilia-of-Gold who had found the new Chimney, as she had explored the endless network of tunnels between the Chimney caverns. Thus, it was she who must lead this war—Seeker or no Seeker.

She gathered up the fragments of her melting courage.

"You're the best of us, Cilia-of-Gold," Strong-Flukes said, slowing. "Don't ever forget that."

Cilia-of-Gold pressed her carapace against Strong-Flukes's in silent gratitude.

Cilia-of-Gold turned and clacked her mandibles, signaling the rest of the people to halt. They did so, the adults sweeping the smaller children inside their strong carapaces.

Strong-Flukes lay flat against the floor and pushed a single eyestalk toward the mouth of the tunnel. Her caution was wise; there were species who could home in on even a single sound-pulse from an unwary eye.

After some moments of silent inspection, Strong-Flukes wriggled back along the Ice surface to Cilia-of-Gold.

She hesitated. "We've got problems, I think," she said at last.

The Seeker seemed to pulse inside Cilia-of-Gold, tightening around her gut. "What problems?"

"This Chimney's inhabited already. By *Heads*."

Kevan Scholes stopped the rover a hundred yards short of the wall-mountain's crest.

Irina Larionova, wrapped in a borrowed environment suit, could tell from the tilt of the cabin that the surface here was inclined upward at around forty degrees—shallower than a flight of stairs. This "mountain," heavily eroded, was really little more than a dust-clad hill, she thought.

"The wall of Chao Meng-Fu Crater," Scholes said briskly, his radio-distorted voice tinny. "Come on. We'll walk to the summit from here."

"Walk?" She studied him, irritated. "Scholes, I've had one hour's sleep in the last thirty-six; I've traveled across ninety million miles to get here, via tugs and wormhole transit links—and you're telling me I have to *walk* up this damn hill?"

Scholes grinned through his faceplate. He was AS-preserved at around physical-twenty-five, Larionova guessed, and he had a boyishness that

grated on her. *Damn it*, she reminded herself, *this "boy" is probably older than me.*

"Trust me," he said. "You'll love the view. And we have to change transports anyway."

"Why?"

"You'll see."

He twisted gracefully to his feet. He reached out a gloved hand to help Larionova pull herself, awkwardly, out of her seat. When she stood on the cabin's tilted deck, her heavy boots hurt her ankles.

Scholes threw open the rover's lock. Residual air puffed out of the cabin, crystallizing. The glow from the cabin interior was dazzling; beyond the lock, Larionova saw only darkness.

Scholes climbed out of the lock and down to the planet's invisible surface. Larionova followed him awkwardly; it seemed a long way to the lock's single step.

Her boots settled to the surface, crunching softly. The lock was situated between the rover's rear wheels: the wheels were constructs of metal strips and webbing, wide and light, each wheel taller than she was.

Scholes pushed the lock closed, and Larionova was plunged into sudden darkness.

Scholes loomed before her. He was a shape cut out of blackness. "Are you okay? Your pulse is rapid."

She could hear the rattle of her own breath, loud and immediate. "Just a little disoriented."

"We've got all of a third of a gee down here, you know. You'll get used to it. Let your eyes dark-adapt. We don't have to hurry this."

She looked up.

In her peripheral vision, the stars were already coming out. She looked for a bright double star, blue and white. There it was: Earth, with Luna.

And now, with a slow grandeur, the landscape revealed itself to her adjusting eyes. The plain from which the rover had climbed spread out from the foot of the crater wall-mountain. It was a complex patchwork of crowding craters, ridges and scarps—some of which must have been miles high—all revealed as a glimmering tracery in the starlight. The face of the planet seemed *wrinkled*, she thought, as if shrunk with age.

"These wall-mountains are over a mile high," Scholes said. "Up here, the surface is firm enough to walk on; the regolith dust layer is only a couple of inches thick. But down on the plain the dust can be ten or fifteen yards deep. Hence the big wheels on the rover. I guess that's what five billion years of a thousand-degree temperature range does for a landscape. . . ."

Just twenty-four hours ago, she reflected, Larionova had been stuck in a boardroom in New York, buried in one of Superet's endless funding

battles. And now this . . . wormhole travel was bewildering. "Lethe's waters," she said. "It's so—desolate."

Scholes gave an ironic bow. "Welcome to Mercury," he said.

Cilia-of-Gold and Strong-Flukes peered down into the Chimney cavern.

Cilia-of-Gold had chosen the cavern well. The Chimney here was a fine young vent, a glowing crater much wider than their old, dying home. The water above the Chimney was turbulent, and richly cloudy; the cavern itself was wide and smooth-walled. Cilia-plants grew in mats around the Chimney's base. Cutters browsed in turn on the cilia-plants, great chains of them, their tough little arms slicing steadily through the plants. Sliding through the plant mats Cilia-of-Gold could make out the supple form of a Crawler, its mindless, tube-like body wider than Cilia-of-Gold's and more than three times as long. . . .

And, stalking around their little forest, here came the Heads themselves, the rulers of the cavern. Cilia-of-Gold counted four, five, six of the Heads, and no doubt there were many more in the dark recesses of the cavern.

One Head—close to the tunnel mouth—swiveled its huge, swollen helmet-skull toward her.

She ducked back into the tunnel, aware that all her cilia were quivering.

Strong-Flukes drifted to the tunnel floor, landing in a little cloud of food particles. "*Heads*," she said, her voice soft with despair. "We can't fight Heads."

The Heads' huge helmet-skulls were sensitive to heat—fantastically so, enabling the Heads to track and kill with almost perfect accuracy. Heads *were* deadly opponents, Cilia-of-Gold reflected. But the people had nowhere else to go.

"We've come a long way to reach this place, Strong-Flukes. If we had to undergo another journey—" *through more cold, stagnant tunnels*—"many of us couldn't survive. And those who did would be too weakened to fight.

"No. We have to stay here—to *fight* here."

Strong-Flukes groaned, wrapping her carapace close around her. "Then we'll all be killed."

Cilia-of-Gold tried to ignore the heavy presence of the Seeker within her—and its prompting, growing more insistent now, that she *get away* from all this, from the crowding presence of people—and she forced herself to *think*.

Larionova followed Kevan Scholes up the slope of the wall-mountain. Silicate surface dust compressed under her boots, like fine sand. The

climbing was easy—it was no more than a steep walk, really—but she stumbled frequently, clumsy in this reduced gee.

They reached the crest of the mountain. It wasn't a sharp summit: more a wide, smooth platform, fractured to dust by Mercury's wild temperature range.

"Chao Meng-Fu Crater," Scholes said. "A hundred miles wide, stretching right across Mercury's South Pole."

The crater was so large that even from this height its full breadth was hidden by the tight curve of the planet. The wall-mountain was one of a series that swept across the landscape from left to right, like a row of eroded teeth, separated by broad, rubble-strewn valleys. On the far side of the summit, the flanks of the wall-mountain swept down to the plain of the crater, a full mile below.

Mercury's angry sun was hidden beyond the curve of the world, but its corona extended delicate, structured tendrils above the far horizon.

The plain itself was immersed in darkness. But by the milky, diffuse light of the corona, Larionova could see a peak at the center of the plain, shouldering its way above the horizon. There was a spark of light at the base of the central peak, incongruously bright in the crater's shadows: that must be the Thoth team's camp.

"This reminds me of the Moon," she said.

Scholes considered this. "Forgive me, Dr. Larionova. Have you been down to Mercury before?"

"No," she said, his easy, informed arrogance grating on her. "I'm here to oversee the construction of Thoth, not to sightsee."

"Well, there's obviously a superficial similarity. After the formation of the main System objects five billion years ago, all the inner planets suffered bombardment by residual planetesimals. That's when Mercury took its biggest strike: the one which created the Caloris feature. But after that, Mercury was massive enough to retain a molten core—unlike the Moon. Later planetesimal strikes punched holes in the crust, so there were lava outflows that drowned some of the older cratering.

"Thus, on Mercury, you have a mixture of terrains. There's the most ancient landscape, heavily cratered, and the *planitia*: smooth lava plains, punctured by small, young craters.

"Later, as the core cooled, the surface actually shrunk inward. The planet lost a mile or so of radius."

Like a dried-out tomato. "So the surface is wrinkled."

"Yes. There are *rupes* and *dorsa*: ridges and lobate scarps, cliffs a couple of miles tall and extending for hundreds of miles. Great climbing country. And in some places there are gas vents, chimneys of residual thermal activity." He turned to her, corona light misty in his faceplate.

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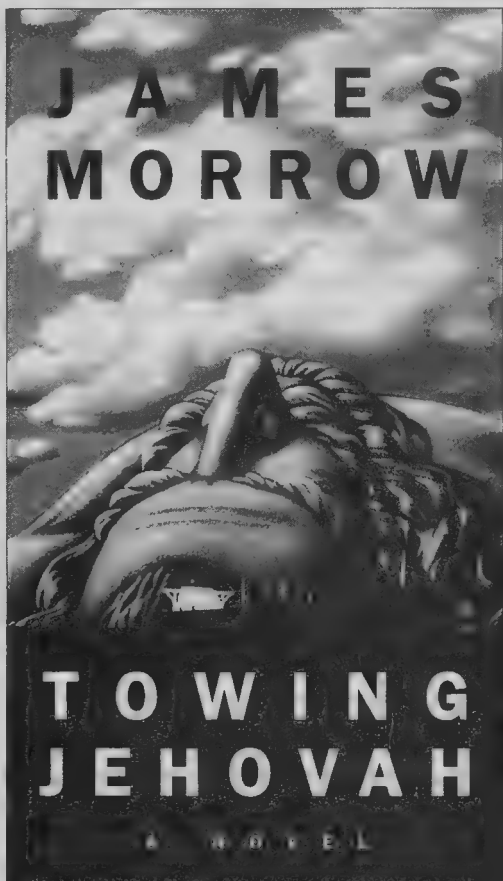
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"So Mercury isn't really so much like the Moon at all. . . . Look. You can see Thoth."

She looked up, following his pointing arm. There, just above the far horizon, was a small blue star.

She had her faceplate magnify the image. The star exploded into a compact sculpture of electric blue threads, surrounded by firefly lights: the Thoth construction site.

Thoth was a habitat to be placed in orbit close to Sol. Irina Larionova was the consulting engineer contracted by Superet to oversee the construction of the habitat.

Thoth's purpose was to find out what was wrong with the Sun.

Recently, anomalies had been recorded in the Sun's behavior; aspects of its interior seemed to be diverging, and widely, from the standard theoretical models. Superet was a loose coalition of interest groups on Earth and Mars, intent on studying problems likely to impact the long-term survival of the human species.

Problems in the interior of mankind's only star clearly came into the category of things of interest to Superet.

Irina Larionova wasn't much interested in any of Superet's semi-mystical philosophizing. It was the work that was important, for her: and the engineering problems posed by Thoth were fascinating.

At Thoth, a Solar-interior probe would be constructed. The probe would be one Interface of a wormhole terminal, loaded with sensors. The Interface would be dropped into the Sun. The other Interface would remain in orbit, at the center of the habitat.

The electric-blue bars she could see now were struts of exotic matter, which would eventually frame the wormhole termini. The sparks of light moving around the struts were GUTships and short-haul tugs. She stared at the image, wishing she could get back to some real work.

Irina Larionova had had no intention of visiting Mercury herself. Mercury was a detail, for Thoth. Why would *anyone* come to Mercury, unless they had to? Mercury was a piece of junk, a desolate ball of iron and rock too close to the Sun to be interesting, or remotely habitable. The two Thoth exploratory teams had come here only to exploit: to see if it was possible to dig raw materials out of Mercury's shallow—and close-at-hand—gravity well, for use in the construction of the habitat. The teams had landed at the South Pole, where traces of water-ice had been detected, and at the Caloris Basin, the huge equatorial crater where—it was hoped—that ancient impact might have brought iron-rich compounds to the surface.

The tugs from Thoth actually comprised the largest expedition ever to land on Mercury.

But, within days of landing, both investigative teams had reported anomalies.

Larionova tapped at her suit's sleeve-controls. After a couple of minutes an image of Dolores Wu appeared in one corner of Larionova's faceplate. *Hi, Irina*, she said, her voice buzzing like an insect in Larionova's helmet's enclosed space.

Dolores Wu was the leader of the Thoth exploratory team in Caloris. Wu was Mars-born, with small features and hair greyed despite AntiSenescence treatments. She looked weary.

"How's Caloris?" Larionova asked.

Well, we don't have much to report yet. We decided to start with a detailed gravimetric survey . . .

"And?"

We found the impact object. We think. It's as massive as we thought, but much—much—too small, Irina. It's barely a mile across, way too dense to be a planetesimal fragment.

"A black hole?"

No. Not dense enough for that.

"Then what?"

Wu looked exasperated. *We don't know yet, Irina. We don't have any answers. I'll keep you informed.*

Wu closed off the link.

Standing on the corona-lit wall of Chao Meng-Fu Crater, Larionova asked Kevan Scholes about Caloris.

"Caloris is *big*," he said. "Luna has no impact feature on the scale of Caloris. And Luna has nothing like the Weird Country in the other hemisphere . . ."

"The what?"

A huge planetesimal—or *something*—had struck the equator of Mercury, five billion years ago, Scholes said. The Caloris Basin—an immense, ridged crater system—formed around the primary impact site. Whatever caused the impact was still buried in the planet, somewhere under the crust, dense and massive; the object was a gravitational anomaly which had helped lock Mercury's rotation into synchronization with its orbit.

"Away from Caloris itself, shock waves spread around the planet's young crust," Scholes said. "The waves focused at Caloris' antipode—the point on the equator diametrically opposite Caloris itself. And the land there was shattered, into a jumble of bizarre hill and valley formations. *The Weird Country*. . . Hey. Dr. Larionova."

She could *hear* that damnable grin of Schole's. "What now?" she snapped.

He walked across the summit toward her. "Look up," he said.

"Damn it, Scholes—"

There was a pattering against her faceplate.

She tilted up her head. Needle-shaped particles swirled over the wall-mountain from the planet's dark side and bounced off her faceplate, sparkling in corona light.

"What in Lethe is that?"

"Snow," he said.

Snow . . . On Mercury?

In the cool darkness of the tunnel, the people clambered over each other; they bumped against the Ice walls, and their muttering filled the water with crisscrossing voice-ripples. Cilia-of-Gold swam through and around the crowd, coaxing the people to follow her will.

She felt immensely weary. Her concentration and resolve threatened continually to shatter under the Seeker's assault. And the end of the tunnel, with the deadly Heads beyond, was a looming, threatening mouth, utterly intimidating.

At last the group was ready. She surveyed them. All of the people—except the very oldest and the very youngest—were arranged in an array which filled the tunnel from wall to wall; she could hear flukes and carapaces scraping softly against Ice.

The people looked weak, foolish, eager, she thought with dismay; now that she was actually implementing it her scheme seemed simple-minded. Was she about to lead them all to their deaths?

But it was too late for the luxury of doubt, she told herself. Now, there was no other option to follow.

She lifted herself to the axis of the tunnel, and clacked her mandibles sharply.

"Now," she said, "it is time. The most important moment of your lives. And you must *swim!* Swim as hard as you can; swim for your lives!"

And the people responded.

There was a surge of movement, of almost exhilarating *intent*. The people beat their flukes as one, and a jostling mass of flesh and carapaces scraped down the tunnel.

Cilia-of-Gold hurried ahead of them, leading the way toward the tunnel mouth. As she swam she could feel the current the people were creating, the plug of cold tunnel water they pushed ahead of themselves.

Within moments the tunnel mouth was upon her.

She burst from the tunnel, shooting out into the open water of the cavern, her carapace clenched firm around her. She was plunged immediately into a clammy heat, so great was the temperature difference between tunnel and cavern.

Above her the Ice of the cavern roof arched over the warm Chimney mouth. And from all around the cavern, the helmet-skulls of Heads snapped around toward her.

Now the people erupted out of the tunnel, a shield of flesh and chitin behind her. The rush of tunnel water they pushed ahead of themselves washed over Cilia-of-Gold, chilling her anew.

She tried to imagine this from the Heads' point of view. This explosion of cold water into the cavern would bring about a much greater temperature difference than the Heads' heat-sensor skulls were accustomed to; the Heads would be *dazzled*, at least for a time: long enough—she hoped—to give her people a fighting chance against the more powerful Heads.

She swiveled in the water. She screamed at her people, so loud she could feel her cilia strain at the turbulent water. "*Now! Hit them now!*" The people, with a roar, descended toward the Heads.

Kevan Scholes led Larionova down the wall-mountain slope into Chao Meng-Fu Crater.

After a hundred yards they came to another rover. This car was similar to the one they'd abandoned on the other side of the summit, but it had an additional fitting, obviously improvised: two wide, flat rails of metal, suspended between the wheels on hydraulic legs.

Scholes helped Larionova into the rover and pressurized it. Larionova removed her helmet with relief. The rover smelled, oppressively, of metal and plastic.

While Scholes settled behind his controls, Larionova checked the rover's data desk. An update from Dolores Wu was waiting for her. Wu wanted Larionova to come to Caloris, to see for herself what had been found there. Larionova sent a sharp message back, ordering Wu to summarize her findings and transmit them to the data desks at the Chao site.

Wu acknowledged immediately, but replied: *I'm going to find this hard to summarize, Irina.*

Larionova tapped out: *Why?*

We think we've found an artifact.

Larionova stared at the blunt words on the screen.

She massaged the bridge of her nose; she felt an ache spreading out from her temples and around her eye sockets. She wished she had time to sleep.

Scholes started the vehicle up. The rover bounced down the slope, descending into shadow. "It's genuine water-ice snow," Scholes said as he drove. "You know that a day on Mercury lasts a hundred and seventy-six Earth days. It's a combination of the eighty-eight-day year and the tidally locked rotation, which—"

"I know."

"During the day, the Sun drives water vapor out of the rocks and into the atmosphere."

"What atmosphere?"

"You really don't know much about Mercury, do you? It's mostly helium and hydrogen—only a billionth of Earth's sea-level pressure."

"How come those gases don't escape from the gravity well?"

"They do," Scholes said. "But the atmosphere is replenished by the solar wind. Particles from the Sun are trapped by Mercury's magnetosphere. Mercury has quite a respectable magnetic field: the planet has a solid iron core, which . . ."

She let Scholes' words run on through her head, unregistered. *Air from the solar wind, and snow at the South Pole . . .*

Maybe Mercury was a more interesting place than she'd imagined.

"Anyway," Scholes was saying, "the water vapor disperses across the planet's sunlit hemisphere. But at the South Pole we have this crater: Chao Meng-Fu, straddling the Pole itself. Mercury has no axial tilt—there are no seasons here—and so Chao's floor is in permanent shadow."

"And snow falls."

"And snow falls."

Scholes stopped the rover and tapped telltales on his control panel. There was a whirl of hydraulics, and she heard a soft crunch, transmitted into the cabin through the rover's structure.

Then the rover lifted upward through a foot.

The rover lurched forward again. The motion was much smoother than before, and there was an easy, hissing sound.

"You've just lowered those rails," Larionova said. "I knew it. This damn rover is a sled, isn't it?"

"It was easy enough to improvise," Scholes said, sounding smug. "Just a couple of metal rails on hydraulics, and Vernier rockets from a cannibalized tug to give us some push. . . ."

"It's astonishing that there's enough ice here to sustain this."

"Well, that snow may have seemed sparse, but it's been falling steadily—for five billion years . . . Dr. Larionova, there's a whole frozen ocean here, in Chao Meng-Fu Crater: enough ice to be detectable even from Earth."

Larionova twisted to look out through a viewport at the back of the cabin. The rover's rear lights picked out twin sled tracks, leading back to the summit of the wall-mountain; ice, exposed in the tracks, gleamed brightly in starlight.

Lethe, she thought. Now I'm skiing. Skiing, on Mercury. What a day.

* * *

The wall-mountain shallowed out, merging seamlessly with the crater plain. Scholes retracted the sled rails; on the flat, the regolith dust gave the ice sufficient traction for the rover's wide wheels. The rover made fast progress through the fifty miles to the heart of the plain.

Larionova drank coffee and watched the landscape through the viewports. The corona light was silvery and quite bright here, like moonlight. The central peak loomed up over the horizon, like some approaching ship on a sea of dust. The ice-surface of Chao's floor—though pocked with craters and covered with the ubiquitous regolith dust—was visibly smoother and more level than the plain outside the crater.

The rover drew to a halt on the outskirts of the Thoth team's sprawling camp, close to the foothills of the central peak. The dust here was churned up by rover tracks and tug exhaust splashes, and semi-transparent bubble-shelters were hemispheres of yellow, homely light, illuminating the darkened ice surface. There were drilling rigs, and several large pits dug into the ice.

Scholes helped Larionova out onto the surface. "I'll take you to a shelter," he said. "Or a tug. Maybe you want to freshen up before—"

"Where's Dixon?"

Scholes pointed to one of the rigs. "When I left, over there."

"Then that's where we're going. Come on."

Frank Dixon was the team leader. He met Larionova on the surface, and invited her into a small opaqued bubble-shelter nestling at the foot of the rig.

Scholes wandered off into the camp, in search of food.

The shelter contained a couple of chairs, a data desk, and a basic toilet. Dixon was a morose, burly American; when he took off his helmet there was a band of dirt at the base of his wide neck, and Larionova noticed a sharp, acrid stink from his suit. Dixon had evidently been out on the surface for long hours.

He pulled a hip flask from an environment suit pocket. "You want a drink?" he asked. "Scotch?"

"Sure."

Dixon poured a measure for Larionova into the flask's cap, and took a draught himself from the flask's small mouth.

Larionova drank; the liquor burned her mouth and throat, but it immediately took an edge off her tiredness. "It's good. But it needs ice."

He smiled. "Ice we got. Actually, we have tried it; Mercury ice is good, as clean as you like. We're not going to die of thirst out here, Irina."

"Tell me what you've found, Frank."

Dixon sat on the edge of the desk, his fat haunches bulging inside the leggings of his environment suit. "Trouble, Irina. We've found trouble."

"I know that much."

"I think we're going to have to get off the planet. The System authorities—and the scientists and conservation groups—are going to climb all over us, if we try to mine here. I wanted to tell you about it, before—"

Larionova struggled to contain her irritation and tiredness. "That's *not* a problem for Thoth," she said. "Therefore it's not a problem for me. We can tell Superet to bring in a water-ice asteroid from the Belt, for our supplies. You know that. Come on, Frank. Tell me why you're wasting my time down here."

Dixon took another long pull on his flask, and eyed her.

"There's *life* here, Irina," he said. "Life, inside this frozen ocean. Drink up; I'll show you."

The sample was in a case on the surface, beside a data desk.

The thing in the case looked like a strip of multicolored meat: perhaps three feet long, crushed and obviously dead; shards of some transparent shell material were embedded in flesh that sparkled with ice crystals.

"We found this inside a two-thousand-yard-deep core," Dixon said.

Larionova tried to imagine how this would have looked, intact and mobile. "This means nothing to me, Frank. I'm no biologist."

He grunted, self-deprecating. "Nor me. Nor any of us. Who expected to find life, on Mercury?" Dixon tapped at the data desk with gloved fingers. "We used our desks' medico-diagnostic facilities to come up with this reconstruction," he said. "We call it a *mercuric*, Irina."

A Virtual projected into space a foot above the desk's surface; the image rotated, sleek and menacing.

The body was a thin cone, tapering to a tail from a wide, flat head. Three parabolic cups—*eyes?*—were embedded in the smooth "face," symmetrically placed around a lipless mouth. . . . No, not eyes, Larionova corrected herself. Maybe some kind of sonar sensor? That would explain the parabolic profile.

Mandibles, like pincers, protruded from the mouth. From the tail, three fins were splayed out around what looked like an anus. A transparent carapace surrounded the main body, like a cylindrical cloak; inside the carapace, rows of small, hairlike cilia lined the body, supple and vibratile.

There were regular markings, faintly visible, in the surface of the carapace.

"Is this accurate?"

"Who knows? It's the best *we* can do. When we have your clearance, we can transmit our data to Earth, and let the experts get at it."

"Lethe, Frank," Larionova said. "This looks like a fish. It looks like it could *swim*. The streamlining, the tail—"

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Dixon scratched the short hairs at the back of his neck and said nothing.

"But we're on Mercury, damn it, not in Hawaii," Larionova said.

Dixon pointed down, past the dusty floor. "Irina. It's not all frozen. There are *cavities* down there, inside the Chao ice-cap. According to our sonar probes—"

"Cavities?"

"Water. At the base of the crater, under a couple of miles of ice. Kept liquid by thermal vents, in crust-collapse scarps and ridges. Plenty of room for swimming. . . . We speculate that our friend here swims on his back—" he tapped the desk surface, and the image swiveled "—and the water passes down, between his body and this carapace, and he uses all those tiny hairs to filter out particles of food. The trunk seems to be lined with little mouths. See?" He flicked the image to another representation; the skin became transparent, and Larionova could see blocky reconstructions of internal organs. Dixon said, "There's no true stomach, but there is what looks like a continuous digestive tube passing down the axis of the body, to the anus at the tail."

Larionova noticed a thread-like structure wrapped around some of the organs, as well as around the axial digestive tract.

"Look," Dixon said, pointing to one area. "Look at the surface structure of these lengths of tubing, here near the digestive tract."

Larionova looked. The tubes, clustering around the digestive axis, had complex, rippled surfaces. "So?"

"You don't get it, do you? It's *convoluted*—like the surface of a brain. Irina, we think that stuff must be some equivalent of nervous tissue."

Larionova frowned. *Damn it, I wish I knew more biology.* "What about this thread material, wrapped around the organs?"

Dixon sighed. "We don't know, Irina. It doesn't seem to fit with the rest of the structure, does it?" He pointed. "Follow the threads back. There's a broader main body, just here. We think maybe this is some kind of parasite, which has infested the main organism. Like a tapeworm. It's as if the threads are extended, vestigial limbs. . . ."

Leaning closer, Larionova saw that tendrils from the worm-thing had even infiltrated the brain-tubes. She shuddered; if this was a parasite, it was a particularly vile infestation. Maybe the parasite even modified the mercuric's behavior, she wondered.

Dixon restored the solid-aspect Virtual.

Uneasily, Larionova pointed to the markings on the carapace. They were small triangles, clustered into elaborate patterns. "And what's this stuff?"

Dixon hesitated. "I was afraid you might ask that."

"Well?"

"... We think the markings are artificial, Irina. A deliberate tattoo, carved into the carapace, probably with the mandibles. Writing, maybe: those look like symbolic markings, with information content."

"Lethe," she said.

"I know. This fish was smart," Dixon said.

The people, victorious, clustered around the warmth of their new Chimney. Recovering from their journey and from their battle-wounds, they cruised easily over the gardens of cilia-plants, and browsed on floating fragments of food.

It had been a great triumph. The Heads were dead, or driven off into the labyrinth of tunnels through the Ice. Strong-Flukes had even found the Heads' principal nest here, under the silty floor of the cavern. With sharp stabs of her mandibles, Strong-Flukes had destroyed a dozen or more Head young.

Cilia-of-Gold took herself off, away from the Chimney. She prowled the edge of the Ice cavern, feeding fitfully.

She was a hero. But she couldn't bear the attention of others: their praise, the warmth of their bodies. All she seemed to desire now was the uncomplicated, silent coolness of Ice.

She brooded on the infestation that was spreading through her.

Seekers were a mystery. Nobody knew *why* Seekers compelled their hosts to isolate themselves, to bury themselves in the Ice. What was the point? When the hosts were destroyed, so were the Seekers.

Perhaps it wasn't the Ice itself the Seekers desired, she wondered. Perhaps they sought, in their blind way, something *beyond* the Ice. . . .

But there *was* nothing above the Ice. The caverns were hollows in an infinite, eternal Universe of Ice. Cilia-of-Gold, with a shudder, imagined herself burrowing, chewing her way into the endless Ice, upward without limit. . . . Was that, finally, how her life would end?

She hated the Seeker within her. She hated her body, for betraying her in this way; and she hated herself.

"Cilia-of-Gold."

She turned, startled, and closed her carapace around herself reflexively.

It was Strong-Flukes and Ice-Born, together.

Seeing their warm, familiar bodies, here in this desolate corner of the cavern, Cilia-of-Gold's loneliness welled up inside her, like a Chimney of emotion.

But she swam away from her Three-mates, backward, her carapace scraping on the cavern's Ice wall.

Ice-Born came toward her, hesitantly. "We're concerned about you."

"Then don't be," she snapped. "Go back to the Chimney, and leave me here."

"No," Strong-Flukes said quietly.

Cilia-of-Gold felt desperate, angry, confined. "You know what's wrong with me, Strong-Flukes. I have a *Seeker*. It's going to kill me. And there's nothing any of us can do about it."

Their bodies pressed close around her now; she longed to open up her carapace to them and bury herself in their warmth.

"We know we're going to lose you, Cilia-of-Gold," Ice-Born said. It sounded as if she could barely speak. Ice-Born had always been the softest, the most loving, of the Three, Cilia-of-Gold thought, the warm heart of their relationship. "And—"

"Yes?"

Strong-Flukes opened her carapace wide. "We want to be Three again," she said.

Already, Cilia-of-Gold saw with a surge of love and excitement, Strong-Flukes's ovipositor was distended: swollen with one of the three isogametes which would fuse to form a new child, their fourth. . . .

A child Cilia-of-Gold could never see growing to consciousness.

"No!" Her cilia pulsed with the single, agonized word.

Suddenly the warmth of her Three-mates was confining, claustrophobic. She had to get away from this prison of flesh; her mind was filled with visions of the coolness and purity of *Ice*: of clean, high *Ice*.

"Cilia-of-Gold. Wait. Please—"

She flung herself away, along the wall. She came to a tunnel mouth, and she plunged into it, relishing the tunnel's cold, stagnant water.

"Cilia-of-Gold! *Cilia-of-Gold!*"

She hurled her body through the web of tunnels, carelessly colliding with walls of Ice so hard that she could feel her carapace splinter. On and on she swam, until the voices of her Three-mates were lost forever.

We've dug out a large part of the artifact, Irina, Dolores Wu reported. It's a mash of what looks like hull material.

"Did you get a sample?"

No. We don't have anything that could cut through material so dense. . . . Irina, we're looking at something beyond our understanding.

Larionova sighed. "Just tell me, Dolores," she told Wu's data desk image.

Irina, we think we're dealing with the Pauli Principle.

Pauli's Exclusion Principle stated that no two baryonic particles could exist in the same quantum state. Only a certain number of electrons, for example, could share a given energy level in an atom. Adding more electrons caused complex shells of charge to build up around the atom's

nucleus. It was the electron shells—this consequence of Pauli—that gave the atom its chemical properties.

But the Pauli principle *didn't* apply to photons; it was possible for many photons to share the same quantum state. That was the essence of the laser: billions of photons, coherent, sharing the same quantum properties.

Irina, Wu said slowly, what would happen if you could turn off the Exclusion Principle, for a piece of baryonic matter?

"You can't," Larionova said immediately.

Of course not. Try to imagine anyway.

Larionova frowned. What if one could lase mass? "The atomic electron shells would implode, of course."

Yes.

"All electrons would fall into their ground state. Chemistry would be impossible."

Yes. But you may not care . . .

"Molecules would collapse. Atoms would fall into each other, releasing immense quantities of binding energy."

You'd end up with a superdense substance, wouldn't you? Completely non-reactive, chemically. And almost unbreachable, given the huge energies required to detach non-Pauli atoms.

Ideal hull material, Irina. . . .

"But it's all impossible," Larionova said weakly. "You *can't* violate Pauli."

Of course you can't, Dolores Wu replied.

Inside an opaqued bubble-shelter, Larionova, Dixon and Scholes sat on fold-out chairs, cradling coffees.

"If your mercuric was so smart," Larionova said to Dixon, "how come he got himself stuck in the ice?"

Dixon shrugged. "In fact it goes deeper than that. It looked to us as if the mercuric burrowed his way up into the ice, deliberately. What kind of evolutionary advantage could there be in behavior like that? The mercuric was certain to be killed."

"Yes," Larionova said. She massaged her temples, thinking about the mercuric's infection. "But maybe that thread-parasite had something to do with it. I mean, some parasites change the way their hosts behave."

Scholes tapped at a data desk; text and images, reflected from the desk, flickered over his face. "That's true. There are parasites which transfer themselves from one host to another—by forcing a primary host to get itself eaten by the second."

Dixon's wide face crumpled. "Lethe. That's disgusting."

"The lancet fluke," Scholes read slowly, "is a parasite of some species

of ant. The fluke can make its host climb to the top of a grass stem and then lock onto the stem with its mandibles—and wait until it's swallowed by a grazing sheep. Then the fluke can go on to infest the sheep in turn."

"Okay," Dixon said. "But why would a parasite force its mercuric host to burrow up into the ice of a frozen ocean? When the host dies, the parasite dies too. It doesn't make sense."

"There's a lot about this that doesn't make sense," Larionova said. "Like, the whole question of the existence of life in the cavities in the first place. There's no *light* down there. How do the mercurics survive, under two miles of ice?"

Scholes folded one leg on top of the other and scratched his ankle. "I've been going through the data desks." He grimaced, self-deprecating. "A crash course in exotic biology. You want my theory?"

"Go ahead."

"The thermal vents—which cause the cavities in the first place. The vents are the key. I think the bottom of the Chao ice-cap is like the mid-Atlantic ridge, back on Earth.

"The deep sea, a mile down, is a desert; by the time any particle of food has drifted down from the richer waters above it's passed through so many guts that its energy content is exhausted.

"But along the Ridge, where tectonic plates are colliding, you have hydrothermal vents—just as at the bottom of Chao. And the heat from the Atlantic vents supports life: in little colonies, strung out along the mid-Atlantic Ridge. The vents form superheated fountains, smoking with deep-crust minerals that life can exploit: sulphides of copper, zinc, lead, and iron, for instance. And there are very steep temperature differences, and so there are high energy gradients—another prerequisite for life."

"Hmm." Larionova closed her eyes and tried to picture it. *Pockets of warm water, deep in the ice of Mercury; luxuriant mats of life surrounding mineral-rich hydrothermal vents, browsed by Dixon's mercuric animals.* . . . Was it possible?

Dixon asked, "How long do the vents persist?"

"On Earth, in the Ridge, a couple of decades. Here we don't know."

"What happens when a vent dies?" Larionova asked. "That's the end of your pocket world, isn't it? The ice chamber would simply freeze up."

"Maybe," Scholes said. "But the vents would occur in rows, along the scarps. Maybe there are corridors of liquid water, within the ice, along which mercurics could migrate."

Larionova thought about that for a while.

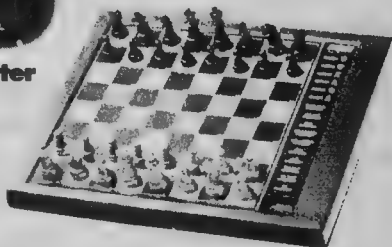
"I don't believe it," she said.

"Why not?"

"I don't see how it's possible for life to have *evolved* here in the first

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place." In the primeval oceans of Earth, there had been complex chemicals, and electrical storms, and . . .

"Oh, I don't think that's a problem," Scholes said.

She looked at him sharply. Maddeningly, he was grinning again. "Well?" she snapped.

"Look," Scholes said with grating patience, "we've two anomalies on Mercury: the life forms here at the South Pole, and Dolores Wu's artifact under Caloris. The simplest assumption is that the two anomalies are connected. Let's put the pieces together," he said. "Let's construct a hypothesis. . . ."

Her mandibles ached as she crushed the gritty Ice, carving out her tunnel upward. The rough walls of the tunnel scraped against her carapace, and she pushed Ice rubble down between her body and her carapace, sacrificing fragile cilia designed to extract soft food particles from warm streams.

The higher she climbed, the harder the Ice became. The Ice was now so cold she was beyond cold; she couldn't even feel the Ice fragments that scraped along her belly and flukes. And, she suspected, the tunnel behind her was no longer open but had refrozen, sealing her here, in this shifting cage, forever.

The world she had left—of caverns, and Chimneys, and children, and her Three-mates—were remote bubbles of warmth, a distant dream. The only reality was the hard Ice in her mandibles, and the Seeker heavy and questing inside her.

She could feel her strength seeping out with the last of her warmth into the Ice's infinite extent. And yet *still* the Seeker wasn't satisfied; still she had to climb, on and up, into the endless darkness of the Ice.

. . . But now—impossibly—there was something *above* her, breaking through the Ice. . . .

She cowered inside her Ice-prison.

Kevan Scholes said, "Five billion years ago—when the solar system was very young, and the crusts of Earth and other inner planets were still subject to bombardment from stray planetesimals—a ship came here. An interstellar craft, maybe with FTL technology."

"Why? Where from?" Larionova asked.

"I don't know. How could I know that? But the ship must have been massive—with the bulk of a planetesimal, or more. Certainly highly advanced, with a hull composed of Dolores's superdense Pauli construction material."

"Hmm. Go on."

"Then the ship hit trouble."

"What kind of trouble?"

"I don't *know*. Come on, Dr. Larionova. Maybe it got hit by a planetesimal itself. Anyway, the ship crashed here, on Mercury—"

"Right." Dixon nodded, gazing at Scholes hungrily; the American reminded Larionova of a child enthralled by a story. "It was a disastrous impact. It caused the Caloris feature. . . ."

"Oh, be serious," Larionova said.

Dixon looked at her. "Caloris *was* a pretty unique impact, Irina. Extraordinarily violent, even by the standards of the system's early bombardment phase. . . . Caloris Basin is *eight hundred miles* across; on Earth, its walls would stretch from New York to Chicago."

"So how did anything survive?"

Scholes shrugged. "Maybe the starfarers had some kind of inertial shielding. How can we know? Anyway the ship was wrecked; and the density of the smashed-up hull material caused it to sink into the bulk of the planet, through the Caloris puncture.

"The crew were stranded. So they sought a place to survive. Here, on Mercury."

"I get it," Dixon said. "The only viable environment, long term, was the Chao Meng-Fu ice cap."

Scholes spread his hands. "Maybe the starfarers had to engineer descendants, quite unlike the original crew, to survive in such conditions. And perhaps they had to do a little planetary engineering too; they may have had to initiate some of the hydrothermal vents which created the enclosed liquid-water world down there. And so—"

"Yes?"

"And so the creature we've dug out of the ice is a degenerate descendant of those ancient star travelers, still swimming around the Chao sea."

Scholes fell silent, his eyes on Larionova.

Larionova stared into her coffee. "A 'degenerate descendant.' After *five billion years*? Look, Scholes, on Earth it's only three and a half billion years since the first prokaryotic cells. And on Earth, whole phyla—groups of species—have emerged or declined over periods less than a *tenth* of the time since the Caloris Basin event. Over time intervals like that, the morphology of species flows like hot plastic. So how is it possible for these mercurics to have persisted?"

Scholes looked uncertain. "Maybe they've suffered massive evolutionary changes," he said. "Changes we're just not seeing. For example, maybe the worm parasite is the malevolent descendant of some harmless creature the starfarers brought with them."

Dixon scratched his neck, where the suit-collar ring of dirt was prominent. "Anyway, we've still got the puzzle of the mercuric's burrowing into the ice."

"Hmm." Scholes sipped his cooling coffee. "I've got a theory about that, too."

"I thought you might," Larionova said sourly.

Scholes said, "I wonder if the impulse to climb up to the surface is some kind of residual yearning for the stars."

"What?"

Scholes looked embarrassed, but he pressed on: "A racial memory buried deep, prompting the mercurics to seek their lost home world. . . . Why not?"

Larionova snorted. "You're a romantic, Kevan Scholes."

A telltale flashed on the surface of the data desk. Dixon leaned over, tapped the telltale and took the call.

He looked up at Larionova, his moon-like face animated. "Irina. They've found another mercuric," he said.

"Is it intact?"

"More than that." Dixon stood and reached for his helmet. "This one isn't dead yet . . ."

The mercuric lay on Chao's dust-coated ice. Humans stood around it, suited, their faceplates anonymously blank.

The mercuric, dying, was a cone of bruised-purple meat a yard long. Shards of shattered transparent carapace had been crushed into its crystallizing flesh. Some of the cilia, within the carapace, stretched and twitched. The cilia looked differently colored from Dixon's reconstruction, as far as Larionova could remember: these were yellowish threads, almost golden.

Dixon spoke quickly to his team, then joined Larionova and Scholes. "We couldn't have saved it. It was in distress as soon as our core broke through into its tunnel. I guess it couldn't take the pressure and temperature differentials. Its internal organs seem to be massively disrupted. . . ."

"Just think." Kevan Scholes stood beside Dixon, his hands clasped behind his back. "There must be millions of these animals in the ice under our feet, embedded in their pointless little chambers. Surely none of them could dig more than a hundred yards or so up from the liquid layer."

Larionova switched their voices out of her consciousness. She knelt down, on the ice; under her knees she could feel the crisscross heating elements in her suit's fabric.

She peered into the dulling sonar-eyes of the mercuric. The creature's mandibles—prominent and sharp—opened and closed, in vacuum silence.

She felt an impulse to reach out her gloved hand to the battered flank

of the creature: to *touch* this animal, this person, whose species had, perhaps, traveled across light years—and five billion years—to reach her. . . .

But still, she had the nagging feeling that something was wrong with Scholes' neat hypothesis. The mercuric's physical design seemed crude. Could this really have been a starfaring species? The builders of the ship in Caloris must have had some form of major tool-wielding capability. And Dixon's earlier study had shown that the creature had no trace of any limbs, even vestigially. . . .

Vestigial limbs, she remembered. *Lethe*.

Abruptly her perception of this animal—and its host parasite—began to shift; she could feel a paradigm dissolving inside her, melting like a Mercury snowflake in the Sun.

"Dr. Larionova? Are you all right?"

Larionova looked up at Scholes. "Kevan, I called you a romantic. But I think you were almost correct, after all. *But not quite*. Remember we've suggested that the *parasite*—the infestation—changes the mercuric's behavior, causing it to make its climb."

"What are you saying?"

Suddenly, Larionova saw it all. "I don't believe this mercuric is descended from the starfarers—the builders of the ship in Caloris. I think the rise of the mercurics' intelligence was a *later* development; the mercurics grew to consciousness *here*, on Mercury. I *do* think the mercurics are descended from something that came to Mercury on that ship, though. A pet, or a food animal—*Lethe*, even some equivalent of a stomach bacteria. Five billion years is time enough for anything. And, given the competition for space near the short-lived vents, there's plenty of encouragement for the development of intelligence, down inside this frozen sea."

"And the starfarers themselves?" Scholes asked. "What became of them? Did they die?"

"No," she said. "No, I don't think so. But they, too, suffered huge evolutionary changes. I think they did devolve, Scholes; in fact, I think they lost their awareness."

"But one thing persisted within them, across all this desert of time. And that was the starfarers' vestigial will to *return*—to the surface, one day, and at last to the stars. . . ."

It was a will which had survived even the loss of consciousness itself, somewhere in the long, stranded aeons: a relic of awareness long since transmuted to a deeper biochemical urge—a *will to return home*, still embedded within a once-intelligent species reduced by time to a mere parasitic infection.

But it was a home which, surely, could no longer exist.

The mercuric's golden cilia twitched once more, in a great wave of motion which shuddered down its ice-flecked body.

Then it was still.

Larionova stood up; her knees and calves were stiff and cold, despite the suit's heater. "Come on," she said to Scholes and Dixon. "You'd better get your team off the ice as soon as possible; I'll bet the universities have their first exploratory teams down here half a day after we pass Earth the news."

Dixon nodded. "And Thoth?"

"Thoth? I'll call Superet. I guess I've an asteroid to order. . . ."

And then, she thought, at last I can sleep. Sleep and get back to work.

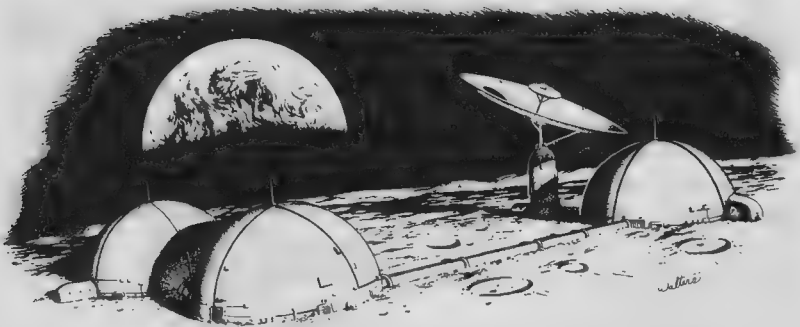
With Scholes and Dixon, she trudged across the dust-strewn ice to the bubble shelters.

She could feel the Ice under her belly . . . but above her *there was no Ice*, no water even, an infinite *nothing* into which the desperate pulses of her blinded eyes disappeared without echo.

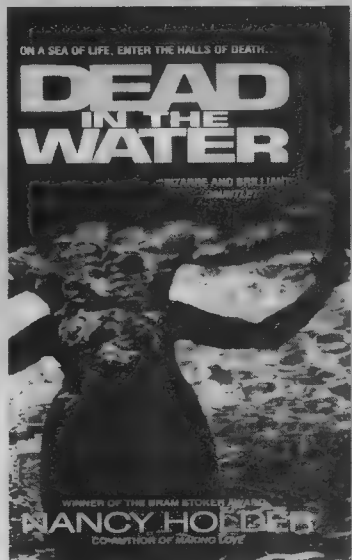
Astonishingly—impossibly—she *was*, after all, above the Ice. How could this be? Was she in some immense upper cavern, its Ice roof too remote to see? Was this the nature of the Universe, a hierarchy of caverns within caverns?

She knew she would never understand. But it didn't seem to matter. And, as her awareness faded, she felt the Seeker inside her subside to peace.

A final warmth spread out within her. Consciousness splintered like melting ice, flowing away through the closing tunnels of her memory. ●



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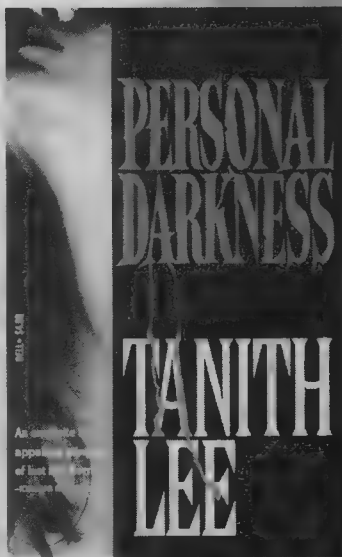
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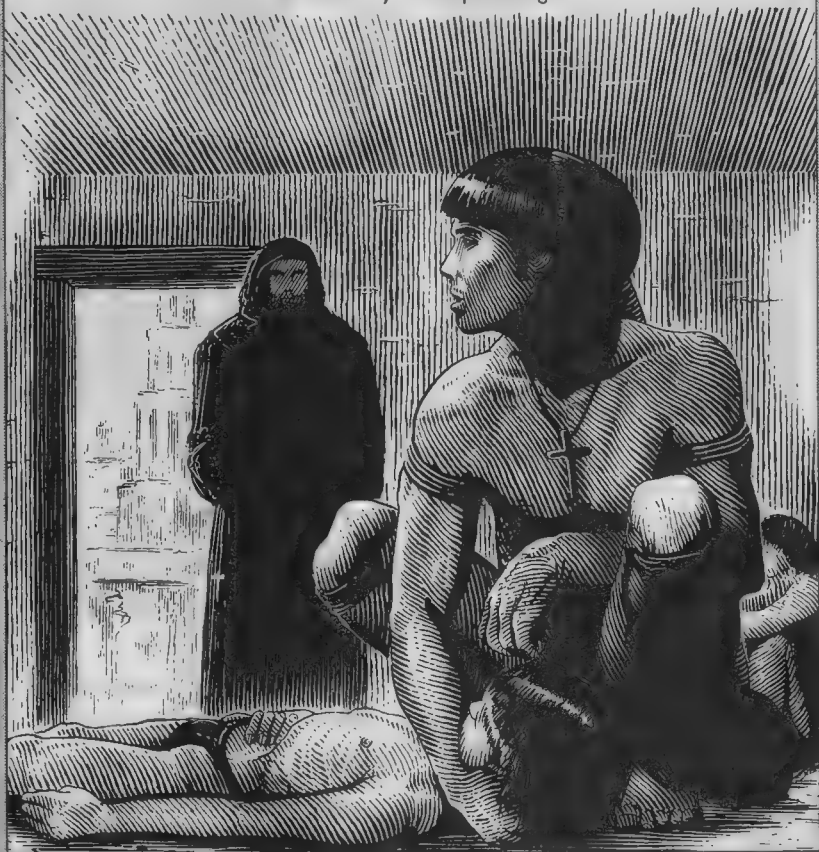


Valerie J. Freireich

SOFT RAIN

The theories of Valerie J. Freireich's college advisor helped inspire "Soft Rain." Dr. Donald Lathrap was an archaeologist who did significant work in the Amazon basin. Although Ms. Freireich went on to study law, she felt that Dr. Lathrap's encouragement helped her become a writer. In some ways, this story is a tribute to Professor Lathrap, who died just three weeks before Ms. Freireich's first sale.

Illustration by Christopher Bing



They called him Juan, and he was in their country, Spain, so he answered to the alien sound. Also, the brief syllable formed part of his people's word for death, and it amused him that the Spanish had provided so appropriate a name. Gray dawn found him kneeling beside a Maya boy, who shivered and sweated on the floor. Six others in the fetid room slept restlessly on their pallets while Juan waited for the boy to die.

Footsteps sounded loud against the stone floor. Fray Bartolome must never have hunted, Juan thought, and smiled as the older, bald-headed man placed his hand on Juan's shoulder, then pressed it comfortably.

"How is he?" Fray Bartolome de las Casas asked.

"Still alive."

"By the grace of God."

Juan knew better than to comment. He moved farther from the boy, then stretched his arms over his head and arched his aching back.

Fray Bartolome squatted, then glanced at the clay cross Juan always wore. He smiled. "You've been up all night with him, I suppose. Rest this morning, then come to my study at noon. I have a surprise."

The sour fragrance of unclean bodies intensified in the momentary silence. Juan suspected that several of the other *indios* were awake, listening, though none spoke Spanish as well as he. "A reading lesson?" He was fascinated by the rendition of sound into coded symbols, and learning to read had deterred him for months from performing the mission on which he had been sent. Then the Maya boy, in his awkward Spanish, had made Juan understand that his people, too, were literate, and the European accomplishment had ceased being sufficient excuse for Juan's delay. But he had not killed Spain, even yet.

Fray Bartolome grinned. "Better. Miguel de Caravajal has brought more *indios* from Darien. One of them is from your country—de Montevideo is bringing him here. You can go home, Juan! De Montevideo intends to explore the interior river forest of Amazon and see the white cities."

"There are no cities," Juan said automatically. He stared past Fray Bartolome, out the open door, thinking of home: the heavy, green forest pushed back from the river to the fields; the town bustling with busy men, smiling women, and children shouting everywhere; and the wide, rushing river itself, clogged at times with traffic moving between home and other cities. Even when he'd left, with so many people sick, the river had been crowded. Could he return home with his burden undischarged? Would they understand? "There is no gold."

"Of course." Fray Bartolome clearly didn't believe Juan, but he had lived in New Spain and in this matter did not urge Juan to speak the truth. Perhaps his conscience understood the immorality such honesty

would be. Bartolome sighed, glancing at the dying boy. "What is it this time?"

Juan shrugged. There were too many diseases, too many causes of death for an *indio* in a European world. All were so incompletely understood by the Spanish that he, a stranger, grasped them better. "The same as Pedro Gutierrez two weeks ago, but worse." Always worse, for an *indio*. He bent over the unconscious boy and removed the damp, cooling cloths from his forehead—they were already warm—dipped them in the water bucket, wrung them out and replaced them on the boy's head, first wiping the boy's neck and chest.

"You're kind to those who aren't your own people," Fray Bartolome said. "I have tried for years to make good Christian Spaniards see that their duty is to gently convert *indios* to the True Faith, not use their heathen status as an excuse to steal their gold and kill. You already understand that before God we are all men."

Uncomfortable with such pious praise while he wore the instrument of the world's destruction in the form of Fray Bartolome's dead god, Juan shrugged and said, "I'm a healer. I do what I can." He fingered the clay cross. He'd made it himself not long after walking into the Spanish colony town of Darien. The longer portion was rounded, like a tube. After tending one of the Spaniards—many were practical enough to notice he was more effective than their native healers—Juan often held the cross to the light, pretending to pray, and wondered if he'd ever have sufficient bitterness to use its contents to kill men he had striven to keep alive.

Fray Bartolome began his magic incantation over the dying boy. Juan leaned against the wall and closed his eyes, listening to gibberish in an alien tongue, knowing he was as perfectly useless as the priest. The boy would die before the sun set.

The sun was high enough that a patch of light, veined in the pattern of the window grating, fell on Juan when he awakened in the empty room. At home light also came in patches, filtered by trees, and for a moment he pretended he was there. "When you come back, then you will marry," his father had said to honor Juan's courage and for luck, that Juan didn't himself die in the forest of the disease he carried during the purification period when he must avoid all men. Juan smiled, day-dreaming of a wife and children, himself both honored healer and a warrior, certain to someday be chief of the town. But along the Heart the air was heavy and green, while here Spain's dry winds smelled of dust. Dust motes floated in the light; he watched them sparkle. Spanish air had hardened his skin, just as the alien food had given him an odor as bad as the Spaniards'. He had become another man, belonging nowhere, like the boy Manuel, bastard son of a Spanish father and an *indio* mother—though Juan's transformation was of the mind, not flesh.

Once Juan had believed each life was a passage down a river, the future determined by the branchings chosen among those many offered by the gods. Then he'd seen the seemingly endless water wasteland that was the ocean, a place where there was no direction, where all shores were equally accessible and where all paths a man might take intertwined with others. The world had become too big, and yet too small. All borders touched.

Finally, from the position of the sun, he knew he couldn't delay checking any longer. Juan removed the last cloth, now nearly dry, from the boy's forehead and stared down at him. The boy was dead. Miguel, they'd called him, and Juan had never asked the boy's own, true name. It saddened Juan to imagine that if the boy's mother somehow came and inquired, he would be unable to inform her of her son's death.

The hall was empty, so he called. A moment later Pedro Gutierrez appeared. The man hadn't bathed since Juan had washed him during his illness and still smelled of those herbs, as well as beer. "The boy, Miguel, is dead," Juan reported.

"Lucky you did better for me, eh?" Gutierrez said jovially. He walked past Juan and peered into the small room shared by the Count's random collection of *indios*, glanced back at Juan and grinned, showing a mouth which would soon be empty of teeth. "You *indios* are little people, and you're smaller than most. I'll help you drag him out."

Though trivial, it was a courtesy, and Juan nodded his thanks. Together, they carried the still limber body down the hall and into the courtyard, where Gutierrez dumped it outside the chapel. "He's Fray Bartolome's problem now."

"I'll tell him." Juan wondered if the new *indio* would truly be from the Heart River, and whether he would have told the Spanish anything to tempt them there.

Gutierrez didn't leave. "I'm leaving for New Spain next month," he said.

What did he want? Absolution from an *indio*? Juan raised his eyes. Gutierrez was watching him; should he have let this man die so as to prevent other deaths? "To one of Fray Bartolome's free villages of Spanish and *indio*?" he asked, though he knew from Bartolome they all had failed.

"No. To Mexico, to get gold, not to farm," Gutierrez said, shifting his weight from foot to foot.

"Maybe I should come."

Gutierrez chortled and clapped Juan on the back. "I will remember you," he said and walked away.

Juan sighed. Fray Bartolome used a small room to the right of the chapel altar as his private study and Juan went directly there. His bare

feet made no sound on the polished stone floor, so that, although the door was open, Bartolome and his visitors seemed startled when Juan entered the little room.

Fray Bartolome motioned Juan to a place in front of his desk. A Spanish gentleman, a *hidalgo*, was seated in a nearby chair. A rougher looking Spaniard guarded a trussed *indio*. Juan bowed at the friar and the gentlemen while attempting unsuccessfully to obtain a clear view of the *indio's* face.

"Juan is a Christian, de Montevideo," Fray Bartolome said. "He has a gentle soul."

Juan smiled and nodded, though neither statement was true.

"You speak Spanish?" the stranger asked. "Say something."

Nonplussed, feeling more like a trained dog than a man, Juan said, "I am at your service, sir," and bowed.

The new captive grunted and his guard slapped him.

"You're from the white cities filled with gold that have been seen along the Amazon?" de Montevideo asked.

Juan shook his head. "No, sir, there are none. Those rumors are all lies. Just fishing villages, and we grow *manioc*." He was forced to use his own word for the root crop.

The *hidalgo* stood and went to the window. He looked outside, then turned to face Juan. "I don't believe you. You're no peasant fisherman. I was there, in Darien, when you walked into the town. I said to myself—that man walks like a king. I would have kept you then, and discovered where you were from and why you came, but it was not possible. Now, I have the power and support—and I have *two* of you. I expect you to be cooperative." He gestured at his captive and finally Juan had excuse enough to look closely at the other man.

He had been severely beaten, more than once. His face was still puffy and bruised from the last incident. Unsightly smallpox scars marred the rest of his face and extended down his chest until the thin cotton tunic covered him. Beneath his breechcloth, his legs were very thin. Nevertheless, Juan recognized his cousin. After their eyes met and Yaxta frowned, Juan looked away.

"There is no gold at all in my small village, or in the Heart River area," Juan said firmly.

"Upon your immortal soul?" de Montevideo said, leaning forward and glancing at Fray Bartolome.

Juan didn't smile. "Yes."

"Where, then?" de Montevideo took a step closer.

Juan glanced at Yaxta and wondered how much Spanish his cousin knew. "Peru," Juan said slowly, filled with guilt, though he had no love for the mountain people and he was far from alone in pointing them out

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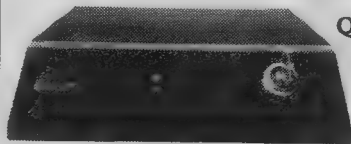
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to the Spaniards, who had been made ever greedier since Cortez had stolen so much gold in Mexico.

"You *indios* always say the gold is elsewhere, not in your own lands," de Montevideo said irritably. "But the people on the coast, and those around Darien, all say the interior is rich."

"What are our riches to you, if they're not in gold, silver or spices?"

"What wealth do you have? Pearls? Gems?"

Juan laughed, though the Spaniard frowned. "Fish," he said, "and fruit."

"Juan is a good man," Fray Bartolome said. "I believe him. I've already told you, your voyage is likely to be one of discovery, not plunder, and the conversion of souls to Christ." He turned to Juan and gestured at Yaxta. "Do you know this man? Is he one of your people?"

Juan walked closer to Yaxta, pretending to examine him. Yaxta stared back, his expression hostile. "Little brother," Juan said in his own language—it was like recreating home in words—"don't move or show you recognize me. They know nothing of our people, except what strangers say." Juan paused as if awaiting a response. None came. Taking a falsely impatient tone, he continued, "I've discovered that there is no war. The sicknesses were accidental."

Yaxta's lips twisted. He spat at Juan's feet. "Traitor."

Fray Bartolome jumped up; the guard grabbed Yaxta's shoulder and roughly shook him. De Montevideo looked from one *indio* to the other. "What did he say?"

"We're enemies," Juan stammered as his cousin's accusation echoed in his head. "From different villages. He recognized my accent."

"Then he is from the Amazon." De Montevideo returned to his comfortable chair and observed Juan. "Is he a poisoner? A sorcerer? The other *indios* would have nothing to do with him during the ocean crossing. One claimed he intended to poison all of Spain." De Montevideo laughed, but looked uncomfortably from Yaxta to Juan. "I'm told that in the interior the cities make war using poison as weapons, and sometimes disease. What do you know of this?"

Meekly, Juan said, "Nothing. The sick like someone to blame."

Fray Bartolome frowned. "Juan is a doctor," he said, sitting back at his desk. "The best I've seen. I've wondered what his people know, and how they trained him. We could learn from them." He looked expectantly at Juan.

De Montevideo got up, walked around Juan as if judging an animal, then said, "Fray Bartolome was right—you speak excellent Spanish. He says you can read and write, too. Prepare a map of your region with all the towns on it, showing the route from Darien to your own village, and his." He pointed at Yaxta.

It was what he feared. Juan turned quickly to Fray Bartolome, who shook his head.

"You're mine," de Montevideo said, noticing that look of appeal. "I've traded with Count de Silva. You in exchange for a share participation in the expedition I'm mounting. You'll come away with me tomorrow."

"I'm sorry you'll leave so soon, Juan," Bartolome said slowly, "but this is an opportunity for you to intercede for your people with God, to teach them Christ's lessons to us all."

"Sir." Juan felt nauseous. Any help at all to Spain betrayed his people. *Traitor.*

"I want that map," de Montevideo said. "I want you on the expedition—Cortez had his interpreter woman, and I'll have you. If you are loyal to me and honest, you'll be rewarded. If not, well, there are other *indios* who can show the way."

"There are no cities on the Heart," Juan repeated.

De Montevideo shook his head and frowned. "Some of the eastern Amazon cities are said to be larger than those in Mexico."

Juan swallowed hard. "It's forest. There are no cities there."

De Montevideo studied Juan, then glanced pointedly at Yaxta. "I expect you to do much better." He walked to the window again and looked out, ignoring all of them.

After a moment, Fray Bartolome came around his desk. He studied Juan and mumbled a brief benediction, then removed his large pewter cross. "This is for you; something better than that piece of clay you made yourself." He kissed the cross and extended it to Juan. "Go with God."

Juan stared. His hands went to his chest, reaching for and protecting his clay cross. Fray Bartolome smiled, awaiting gratitude—Juan supposed he intended a disinterested kindness—and on Juan's right, half hidden by his guard, Yaxta glowered.

"Thank you," Juan said. His tone was flat. Fray Bartolome looked disappointed. Juan took the pewter cross, hung it around his neck and set the clay one inside, closer to his heart.

Juan was made responsible for Yaxta, whom they called Jorge, until they left for Seville the next day. "Do you want his hands tied or not?" the guard asked.

"Untied, please."

The guard snorted. "Enemies, huh?" But he released Yaxta.

"Follow me," Juan said curtly, in Spanish. Every *indio* who crossed the ocean knew that much of the language.

Yaxta stared through Juan, but followed him to the *indios'* room.

Juan, for lack of anything better to do with his hands, gathered up the

bedding of the Maya boy's pallet. Little Manuel's mother would wash everything before it was used again, if Juan asked. "Well, cousin?"

"Did you lose it?"

"No."

"And you haven't used it." Yaxta turned away. "They should have sent a warrior the first time, instead of a priest!"

"Grandfather wanted to learn about them, to judge, not simply to kill."

"You've always thought too much. How much do you need to know about the people who have killed all your family and friends?"

Juan blanched. He went to the tiny window, having to stand on tiptoes to see outside. The brown hills stretched away far into the distance, with small brown houses in a cluster beside the trickle called a river here in Spain. It was difficult to imagine a greater contrast to his home. "All dead?"

"The world is collapsing. New Town is abandoned, too few people were left. The trees are growing back into the farther fields and even into empty houses in our own city. The river is bare of traffic; everyone who survives is afraid. People scatter from each other, fearing another round of plague, and blame each other for them. If you had acted swiftly, it would be the Spanish who are dying, and they wouldn't have had the strength to cross the ocean anymore."

Juan clutched his arms against his chest. Would a new disease have stopped the Spanish tide? In his heart, he didn't think so. At best it might slow it, but the mixing of the worlds was inevitable and more than any other thing it was that contact which was killing his people. "Our family?" he asked.

"You used to have one. Now we only have each other." Yaxta hit his hand against the wall. "Sometimes they scream, when they're delirious. No one has a fire for their wives or fathers. There are too many dead and the survivors are too weak. Scavenging animals feast in houses filled with dead."

"Stop!" Juan leaned his head against his arm and cried, looking out over the brown landscape. He'd seen the destructiveness of the alien diseases on the captives, but had neglected—perhaps refused—to consider what might have been happening to his own home. And he'd postponed, over and over, releasing an epidemic on the unsuspecting Spanish, who barely knew his people existed, let alone that they were at war. Juan made a fist around the clay cross. "I still have the blood disease, here, hidden."

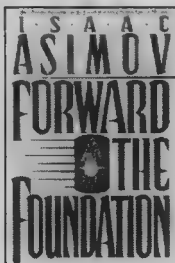
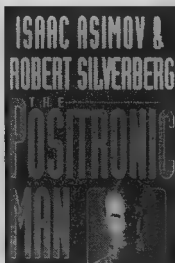
"Before he died, our grandfather sent me." Yaxta came to Juan, patting his own right thigh, where a lumpy scar was obvious. "Tomorrow we go to a large city?"

Juan released the clay cross; it was warm against his chest. "The blood

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disease starts slowly, so they don't realize the source. It kills young adults, wrecking the most important generation. It was the worst in grandfather's arsenal, because it requires quarantine of the area for at least a generation. If we spill this into their water source, all of this side of the ocean will wither as it spreads, because these people have no idea how to contain it. It will travel to our side of the ocean, and from what I've seen, other *indios* understand as little as the Spanish about healing. We must decide: Is this worth doing? It will be blind, random revenge."

Yaxta grabbed Juan's hand and stared into his eyes. "If we have lost the war, at least don't let them win!" Yaxta spat when Juan did not reply. "You're too soft. There are two sides to medicine—the disease and the cure. A healer must know when death is necessary. They didn't worry that your beautiful sister died looking uglier than me."

Juan closed his eyes, remembering his young sister waving to him as he left, then opened them quickly as his vision corroded into an image of what smallpox could have done to her face. "They don't care, it's true, yet they never set out to kill us. It was an accident. They only want gold."

Yaxta patted his thigh. "Tomorrow their carelessness begins to kill them."

Juan and Yaxta traveled in a cart pulled by a single horse and driven by the guard, while de Montevideo and his entourage rode ahead. Fine-grained dust coated Juan. He imagined traveling down the river and recalled the relative smoothness of the ride compared with this, the effortless speed of moving with the water, the sweet green smell and the cleanliness. He remembered a soft rain falling on his shoulders, dappling the water's surface as he paddled away from the city on his way to Darien. It seemed another lifetime. Most of those who'd watched were dead, and the cities of the Heart were swiftly dying; de Montevideo wouldn't find them. People would drift into the forest when there was nothing left to bind them to the cities, when they feared each other's poisons. Perhaps some towns would release their death against other innocent victims, even while trees overtook the human structures and the soil dissolved the rest. In time, there would be no sign that men were ever there.

Death would look different in stone-built Spain. Human buildings were scattered over the landscape, square, stone boxes that, howsoever they were decorated, seemed cavernous and grim—but they would last. The Spanish could not be so easily forgotten. But were Spain's empty houses to be the only monument Juan's people left behind?

"Were you exposed to the blood disease?" Yaxta asked, breaking their uneasy silence.

The guard grunted, turning to Yaxta, then he looked at Juan. "Tell the other one if he makes any trouble, I'll tie him up again."

"Of course." Juan bobbed his head, saw Yaxta watching from his battered face, and was ashamed to be so obsequious. Was all his philosophy only a coward's accommodation? In his own language, Juan answered his cousin. "No. This disease is too virulent for that." He'd walked into Darien prepared to destroy the city-state called Spain, but the absence of Spanish women had led him to surmise the true home of the invaders was elsewhere. That search had kept him occupied for months, long enough to learn the invaders' language and to be swayed by his expanded view of the world, by the Spaniards' lack of intention, and their obvious inability to control disease, into hesitating to kill.

Yaxta scratched the lumpy tissue of his right thigh as though it itched. "It doesn't matter. We have no home to return to." He nodded ahead. "Only a goal."

Yaxta wanted to die. His world was dead, but Juan—it shamed him—had found a corner in another world and from that vantage found it impossible to hate. However strained his doctrines were, Bartolome de las Casas was a good man. Gutierrez was an ignorant oaf, but he was capable of gratitude. Manuel's mother sometimes needed a friend. "The experiments on controlling Spain's diseases didn't work?" Juan asked.

Yaxta glared at him. "Of course not! They were too strong for us, too wild and new to be tamed. There was no time."

The cart plodded on. The land seemed slightly more green than at the Count's residence. Men and women stooped in the fields at labor little different from that of farmers along the Heart. Their children played beside the road, staring up at the two strange looking men. A small boy ran alongside the cart for a time, calling questions, though the guard ignored him. His expression was like that of any child, trusting. "We're *indios*," Juan finally said over the sound of the horses' hooves on hard ground. "We come from far away, but we are men like you."

The boy's eyes were very round as the cart pulled away.

The guard glanced over his shoulder. "A fellow told me you were a good healer. My woman's sick." He jerked his chin in the direction of their travel. "Since the baby." His body was too tense for his expression to be believably impassive.

"Some things I can do, and others not," Juan said, careful not to raise hope. "I know few of the herbs in Spain, and I don't have any of my own. I'll try, if you understand that."

The guard nodded and pulled on the reins. The advance party had left the dirt track near a small group of buildings. De Montevideo and his servants stood by a creek while the horses drank. The buildings included a blacksmith and a way station serving alcohol—Juan smelled the sour

brew—but none of their group had gone inside. The blacksmith was a huge man with the neck of a bull. Juan frowned at the spontaneous comparison. Spain was a bull, something unknown in Juan's home, but unstoppable and strong. The blacksmith looked out of his openfronted shed as he tended a fire so hot that Juan felt it from the road; their eyes met and Juan looked down at the dusty ground. The guard took the cart to join the others.

Yaxta jumped out as soon as the cart was still. "Why wait?" he said. "I should have done it as soon as I left the ocean ship. The disease will spread easily enough from anywhere once it begins."

The guard seemed startled by Yaxta's sudden movement. "What's the matter?" he demanded suspiciously of Juan.

"We need to stretch," Juan said. Moving more slowly, he climbed from the cart.

A woman was washing clothes at the creek's bank. Water dripped down her arms as she raised them and wrung out the pale fabric. That, at least, was a familiar picture; Juan remembered women doing exactly that along the smaller channels of the Heart. From behind, her black hair gleaming in the sunlight, the woman could have been a friend.

Yaxta sauntered toward the water upstream of de Montevideo without looking at anyone, scratching furiously at his thigh. A rivulet of blood ran down his leg.

"Wait!" Juan called.

Several of the Spaniards looked at him. One spoke and they all laughed, then turned away.

Yaxta had stopped. "Are you coming?" he asked. "Or is that truly a Spanish cross you wear?"

"Not here," Juan said, gesturing at the woman. He thought of what she would bring in to her family on the clean clothes and he shuddered, but his hands went to the clay cross, still around his neck. "In the town. It will spread faster."

Yaxta laughed. "You'll always have an excuse to delay. I'll do it now, and you can spread yours when the Heart is dry of everything but blood for all I care." He turned back to the creek with a contemptuous gesture of his left hand. He stopped tearing at his leg and seemed to withdraw something from the open wound.

The woman turned from her laundry and looked at Juan, perplexed, then she smiled. Perhaps she was thinking of Mexican gold, perhaps it was nothing, but her smile broke Juan's deadlock and he ran toward his cousin. "No!" he yelled. "Yaxta, no!" He caught his limping cousin and shoved him to the ground.

Yaxta rolled away and scrambled to his feet. "Spaniard!" he hissed.

"Traitor!" His hand clutched a bloody cylinder and he shuffled backward toward the creek, keeping his attention fixed on Juan.

"We're dead," Juan said. "Why kill them, too? And others? They're all men like us. Shouldn't there be someone left?"

"Not them!"

Juan jumped at Yaxta, but his cousin twisted and escaped, then stood warily observing Juan.

"What's going on?" bellowed de Montevideo, but Juan ignored him, concentrating on Yaxta's eyes.

"Don't let the last thing our people accomplish be to kill," Juan said desperately. "Let it be life."

Yaxta yelled a battle cry, swung around and raced toward the creek. Juan rushed after him. Spanish curses came from behind them both.

At water's edge, Juan caught Yaxta again, bringing him down and falling atop him hard enough to momentarily stun them both. Yaxta's fingers tried to break open the cylinder. Juan lunged and bit down on Yaxta's wrist.

Yaxta kned him in the groin. Juan groaned, but didn't release his cousin, though the taste of Yaxta's blood was in his mouth, disgusting him.

Someone laughed. Several did. Juan raised his eyes and saw the Spaniards enjoying the combat between the two desperate *indios*. Perhaps they'd speculated on who would win.

Yaxta struggled beneath him, then seemed to notice that Juan had released his biting grip. Yaxta stopped, too. "Cousin," Yaxta whispered. "Will you kill me, for them?"

Juan spat out the blood. Yaxta didn't move.

"What's this about?" de Montevideo demanded, coming closer.

Juan sat up, but didn't look away from Yaxta. His hands went to the old clay cross. Yaxta smiled and struggled to sit.

From far away, Juan heard a child laugh. He wasn't certain if it was memory or real or a fantasy of what might have been. He grabbed Yaxta's cylinder as his cousin was off balance, jumped to his feet, and, pushing past the startled Spaniards, raced to the blacksmith's shed before anyone could stop him, or he could change his mind.

The Spaniards were larger men, much larger, but they were slow. He reached the shed and flung Yaxta's small cylinder into the blacksmith's fire before any Spaniard noticed.

"What are you doing, *indio*? Are you crazy?" de Montevideo shouted furiously. He had followed Juan into the blacksmith's shop with his confused men.

Juan looked past them, into the open field. Yaxta was being kicked by their guard. Juan reached inside his shirt without answering. His hands,

from long habit, caressed the clay cross. He rolled his fingers across it, moving his lips as though praying, then yanked and broke the cord around his neck.

De Montevideo swore and grabbed at Juan.

The blacksmith moved ponderously as he came from behind. Juan ducked. Using both hands, he broke the clay cross, separating the two smaller pieces from the single long one. That he rapped hard against the wall, shattering the clay, exposing a small cylinder like that Yaxta had worn in his flesh. In a single swift movement, he threw it into the fire, too.

He stopped. He bowed at de Montevideo.

"Desecration of the cross," de Montevideo said, his voice trembling. He moved warily closer to Juan, and when the *indio* did nothing, he slapped him hard across the mouth. "And Fray Bartolome said you were a good man." ●

CRESCENT MOON

The
moon
is shy.
You can
find her
peeking out
at the world
from the edge
of my fingernails.
When I cut them
the moon slips
out, no bigger
than a nail
clipping as
she hangs
up there
in the
sky.

—Lawrence Schimel

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MFSC-5

Rob Chilson

In a harsh and repressive future society,
it's not surprising to find that . . .

DEAD MEN RISE UP NEVER

Illustration by Steve Cavallo



The newspaper says that Gordon Kane is dead: its resonant tones are solemn. Long service in the Guard Corps of the Army of National Renewal, three times decorated, so on, so on, funeral at blah-blah church, burial at Westmoreland Memorial. I remember this name, but I don't think I ever served under him. I heard about him, though.

I turn off the paper and open a plastic can of cheap fake coffee, drink it cold, straight from the can. My hand shakes a little. I look out the window, at a creeper on the shabby brick wall of a crumbling building that houses failing businesses. The creeper is dead, from frost; its leaves have gone from beautiful red to dull brown.

So have I.

I turn on the paper and search for more about Kane, but find nothing except the paragraph about his illustrious service, so I turn it off again. Then I look at the time and have to hurry off to work.

The job keeps me alive. That's all I can say about it. Middle of the afternoon, the boss comes into the shop with an aluminum piece I was to cut three specified holes in, and the order sheet describing the work to be done. Everybody stops work and looks at me.

"I at least thought you could read, Keiler!" The boss is a red-faced man with no hair; when he gets mad, as now, the top of his head also turns red. "Didn't they teach you that in Rehab? Look at this! Next time pay attention, and do it right!"

Everybody knows I was in Rehab, it's mentioned practically every day, so it's no big deal. Boss gets frustrated and angry in the middle of the afternoon, usually. I duck my head, don't say anything.

"Do you need a little rehabilitory reading, too?" he demands. Big wit. People chuckle a little, dutifully. Old joke.

"I'm sorry," I say. "I'll do it over. Try to do it better. Sir." Mustn't show disrespect. I don't look at the order or the workpiece; I know it is correct, but I mustn't give him the lie.

"If you ever want to be a Citizen, you'll have to try to do better," he growls. "You call this 'service to the Nation'?"

"No sir, of course sir, you're right sir."

He throws it down on my bench and stomps off, still growling. People look away with polite pretense, but they all feel good. Smug. Some are smiling slightly. The superiority of the Citizen to the probationer ex-Rehab dog has been reaffirmed. They are good boys and girls. I am a bad boy.

So it goes all day. I do my little "service," I smile, I nod, I agree, I do whatever the Citizens tell me. Some day you too can be a full Citizen again. Yeah.

Afterward I am tired, so tired I don't think I will live. It's because the job takes so much of my life from me. Someday it will kill me. I take the

overway home, riding at the back, away from the windows so that Citizens can sit there. I get out at the nearest (not very near) station, and walk the rest of the way to my studio apartment. I go through three locked doors; they say crime is way down since the Cleansing, but that's only in Citizen town. Here, crime still pays. I wonder how long it would take National Police or ANR to get through those locked doors—less time than it takes me, I bet.

I sit down on my ratty old couch and think about some things. Maybe I should call up Morey, or go over. Same odds either way; our phones tapped, his apartment bugged. If we go for a walk, it looks even more suspicious. He is a bad friend for an old lag out of Rehab and on probation for Citizenship to have; a jewkike, yet. But he's my only friend who's not still *in* Rehab.

And the men who kept us there are mourned as national heroes.

Fuck this, I think. I get up, grab some fake-cheese and cracker sandwiches in individual wraps, shrug into a tatty old winter coat. Too heavy for this weather, but it's the only coat I've got. Besides, my resistance is low, I feel the cold a lot. I struggle out through the doors, hurry to the overway station. At the station, an NP cop looks suspiciously at me; he is not used to seeing me back at night, I don't go out much. For a moment, I fear he will stop me, but he is too tired to bother.

I board the overway tramcar when it arrives, hum out under elevated overhead cables. The city flows past for a long time, with stops and starts. I eat my cracker sandwiches and piously put the wrappers in the pull-out disposal tray. I hope no narc finds those old butts in there and accuses me of smoking on the overway. Expensive cigarettes, only a Citizen could have bought them.

The sandwich wrappers will gradually oxidize away to water vapor and carbon dioxide once torn, but some Citizens glare at me anyway for littering, for eating on the overway, for being poor and probably unAmerican. Certainly unAmerican; *Americans* are not poor and do not wear ragged coats like mine, probably a jewkike or furriner of some kind, should be sent back where he comes from.

I would not be admitted to blah-blah church for the funeral looking like this, even if I remembered which one it was. I never go to church anyway, which is very bad for a probationer, but I got preached at enough in Rehab to last a lifetime. But Westmoreland Memorial Cemetery has no doormen. I get off the overway and take a bus near, then walk.

Gates all around it, none locked. Security is no problem here, and there are cameras anyway. Not much crime in the street except in the slums, it's an executive suite monopoly in Citizen town. I go in and wander around a while. Westmoreland is beautiful. Grass, still green—it's the last to go when the frost comes. Big beautiful old trees here, mostly oaks

still covered with leaves that are still more red than brown. The sunset light shines brighter here, it even almost seems warmer. The smells are of autumn, that sweet sad time I remember from when I was a kid. Hope all gone now; winter forever and ever, now.

The cold is too much, despite the beauty; I finally find a big tomb like a small stone house and stand there out of the wind. The time comes for the burial, and goes by. Half an hour late, the caravan arrives. I follow it afar across the cemetery, politely not walking on the graves of the respectable Citizens who can afford to be buried in Westmoreland.

Farther on, I am bemused to find myself in a poor section. Deserving poor, respectable poor. Even Rehabs who made good are buried here. Big thing for Democracy these days, big propaganda push. Even in Rehab, if you said, "Crazy for Democracy," you could get ten days in the deep hole, and there we had more freedom than anyone. And where do they decide to bury Citizen Kane? Where else?

Right among the Rehabs he "loved to serve" so well. Ah, democracy.

I come up to the graveside crowd in the middle of the ceremony and stand at the back. Can't hear much. Don't need to hear, I know what they're saying. The public wouldn't stand for the truth. It hasn't heard it since Truman days, not from its rulers.

I don't know why I came, now that I'm here. To make sure he really is dead? To hear the lies? No, not that. Maybe to hear if a word or two of the truth slips out? Not worth the trip, the chance for that.

Foolish to come here. Already people at the outskirts of the crowd are glancing sidelong at me, or over their shoulders. I don't fit. It's my old coat. It's my scuffed, worn-out shoes. It's my long, unkempt hair. It's my raddled, battered face. It's my bitter, bleak expression, most of all. Good place to get back into trouble; lots of ANR types at a funeral of one of their own. Better to fade out.

Too late.

A big man comes drifting quietly over to me. He's a little taller than me, but thick, not like my pinched thinness. Broad shoulders, heavy arms, ponderous thighs, inside his dark heavy warm expensive suit. I look at the coat; it's almost familiar. Then I get it; it's a polite civilian version of the modish uniform coat that the Army of National Renewal wears while "serving" in the Guard Corps. A recognition thing for old Guards and other ANR types; also a boast.

I know him when he smiles.

"Hello," he says. "Don't I know you from the Army? Kelter, or something, isn't it?"

"Keiler," I say. I take my hand out of my coat pocket and let him grip it in his warm, soft-leather-gloved paw.

"I'm Stockton, Major, ANR Guard Corps."

I know it. You were Stockton, Robert, Corporal, with a thick foot, when I knew you at Fort Leonard Wood in Missouri. And you were personally responsible for the deaths of seventeen men, to my limited knowledge. I can guess how the women fared under you, when you "served" in their camps. Because all you Guards were rotated, plum jobs and pit jobs, turn about. Democracy, man.

"And what was your sin, omission or commission?" A bad boy, or just a criminal?

"Omission. A twenty for Disrespect. Em-You-Dee," I say. Morally Undesirable Element, technically MUE, but we always made it "Mud." The law reads, "Omitting to show a proper respect for the Laws and Officials of the Nation. . . ." A bad, bad boy.

"Yes, I thought so!" Stockton laughs heartily, but I think with genuine delight. I'll bet, in fact. "I thought I recognized you. It's a pleasure to see you here. Paying your last respects, no doubt. A great man, Gordon Kane, a great Guard. He served well. And how do you serve?" he asks, with a sharp look.

"As well as I can."

It's not the expected response, not how a probationary Citizen, only a few years out of Rehab and ambitious for acceptance, should respond. I should've said, "I serve the Nation to the best of my ability."

Stockton shakes his head sadly. "Ah, Keiler, Keiler," he says, getting the name right—they know their business, and we *are* their business. "I hope it won't be like that with you."

I hope so too, and say so, muted. I know he will pull my dossier, perhaps as soon as he gets back, or maybe tomorrow. If he's in the mood, I could be back in Fort Leonard Wood of blessed memory next week.

He looks sadly at me, and I remember the look. Summer it was, hot, humid, killing Missouri weather. Breaking rocks, we were, not for any reason, just to make us earn our bread by the sweat of our brow. If we didn't break a cubic meter a day, we didn't eat. Miss eating one day, and see if you can break your cubic meter the next. If you don't for three days running, it means the hole—not the deep one, solitary, but the shallow one, almost equally hard work on half rations. Two weeks in the shallow hole leaves you exhausted, starved. Then they put you back to breaking rocks again.

You really do your best, your first day back, but you aren't likely to make it. Fortunately the others will each kick a few little rocks your way. And so you eat. Maybe.

Stockton smiled that way at Robert Lucciani, I remember, a quiet, youngish, thin-chested fellow who coughed a lot. I remember how Stockton talked to him, much as he talks to me now. And Lucciani, who had only paused to catch his breath, and stepped to the side of the pit into

the narrow band of shade, was sent to the shallow hole for three weeks. Stockton smiled sympathetically and shook his head at him then, as he shakes it at me now. Lucciani died four days after he got back. He fell and blood poured out of his mouth. They made us drag him off by his feet, him trailing blood all the way, and still alive. Not after he'd been in infirmary for a couple of hours, though.

Stockton sighs. "We worked so hard on you, and the others. Ever since the Great Cleansing in '27, we've labored to purify the Nation. And God has smiled on our efforts! Crime is greatly reduced, sexual perversion nearly ended, the Family has been restored. Good women dare to walk the streets, and hold up their heads in public again, movies are fit for kids and other innocents to watch." He smiles in quiet triumph, good over evil. Him over me.

Then he looks at me. He shakes his head. "I'd hoped for better things, Keiler," getting it right again. I think that frightens me most.

I dig my hands into my coat pockets and shiver, not just from the cold wind that sends dead red leaves spinning around me. "Well, you know how it is," I say. "Hard to be positive when there's no money. Jobs are hard for a probationer to find, and not so good. A man gets to thinking, why struggle? You know?"

He does know, as his sparkle and "sympathetic" smile show. He nods slowly, concealing the smile; it gives too much away. But his eyes still glint.

"I think I do understand," he says. "Nevertheless, I am disappointed in the degree of your purification. I do hope you continue to struggle for your soul. The probationary period was never meant to be *easy*. Serving a few years in the Rehab camps is not meant as a punishment, you know. It's a *learning* experience. And the probationary period tells us if you have overcome your sins. Disrespect, was it? Well, well, no doubt you've learned a better respect. I feel for you, my boy, indeed I do."

I'm older than he and look even older after my twenty—there is no time off for good behavior in Rehab; there is no good behavior in Rehab. But I'm his boy. He is the superior, and always will be. Even if I make full Citizen, I will always be inferior. Look here, a fully Rehabbed Citizen—applaud, all you fat Citizens, the system works! America is the greatest Nation on Earth, with the only true democracy, no, correct that—oops, too late, a twenty for "Omission" . . . I pull my wandering thoughts back.

Stockton continues his kindly preaching, but his lips are wet at the corners and his eyes gleam. I know he'll pull my dossier, tonight. I know I'll be back where I belong inside a week. I know, now, why I came here.

All around stretch the neatly tended graves, many of them graves of Rehab victims, some possibly victims of Stockton himself, or of Kane,

over whom they are now solemnly folding an American flag, fold over, reach across, fold over, so on, so on, always the flag over them. And under the ground lie the victims. No one folded flags over *them*, I know, Rehabbed or not. I picture them lying there, Cleansed, rotting, and forgotten.

When I was young, before they outlawed them, there were horror comic books and movies. I remember them, the rotting dead rising, tearing out of their graves, pursuing and savagely killing the innocent fat Citizens of their day. I never knew why we undesirables liked horror stories like that so much. Now I do: now I know how evil the innocent fat Citizen can be in the pursuit of his innocence and my guilt.

Stockton pats me on shoulder, and I smile back.

I envision, I wish for, hope for, expect, *demand* the earth to open, the neat green turf to split, the dead to claw their way out of the ground with dirt in their hair and in their mouths, in death as it was in life, to rise up rotting and to confront the smiling wolves in neat civilian versions of their "service" uniforms, to rise and rend and tear and kill, to confront their oppressors with their empty staring eye-sockets and see them quail before dying, to force them to admit, just *once*, their guilt, I want to see the dead rise and cry out with mummy tongues to demand of a deaf and lesser God a justice denied here on Earth for all unforgivable sinners like me. . . .

I feel the ground move beneath me, and almost cry out in my fierce joy, willing to die at their hands by mistake if these guilty ones die with me. But Stockton notices nothing. He takes my hand again, still kindly preaching to the man he means to kill. Stockton looks at me with concern. The earth does not move, has not moved. The green turf is still intact, still and green and unbroken as far as my eyes can see. The mourners around the grave notice nothing, talking loudly now that the service is over, drifting away to the sleek cars.

Nothing.

My despair is so great that my knees shake, but I must conceal it. I smile, I nod, I agree. Stockton pats me on the shoulder again.

I shudder with unutterable horror, like it says in those forbidden books, but it is not at his touch. I shudder because I know that the ground will *not* tremble and tear, that the dead will not rise up, that justice will be forgotten, and never brought to mind. The guilty will flourish like the green bay tree while they are on earth, and later go on to "serve" in Heaven. They will never quail before they die, they will never be confronted by the ghosts or by the rotting bodies of all those they have slain.

There are no ghosts, and the dead do not walk.

The indifferent wind of the indifferent universe blows colder around me. My rigid grin is fixed. My tongue is dry, mummified, dead. My face

feels like a skull's. My eyeballs are already cloudy. There is dirt in my hair, in my mouth.

I go on smiling, nodding, agreeing.

Dead men rise up never. ●

NEXT ISSUE

Nebula-winner **Michael Bishop**, one of the most respected SF authors of our day, returns to our pages next month after too long an absence with our compelling and compassionate September cover story, "Cri de Coeur." This big, complex, and lyrical novella takes us along with a convoy of immense ark-ships, headed out and away from Earth to the stars, daring the unknown dangers of the interstellar gulfs in search of a new home, a new start, a new life. But even out among the stars, as Bishop eloquently demonstrates, love and duty can come into conflict, and the most rewarding territories to explore, and also the most dangerous, are the uncharted reaches of the human heart. . . . Bishop is one of SF's best writers, and this is his most powerful and substantial work at novella length in a long time, a major story. Don't miss it!

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Look for our September issue on sale on your newsstands on July 19, 1994, or subscribe today!

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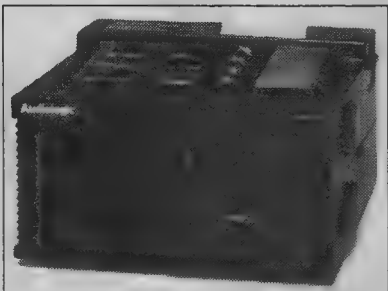
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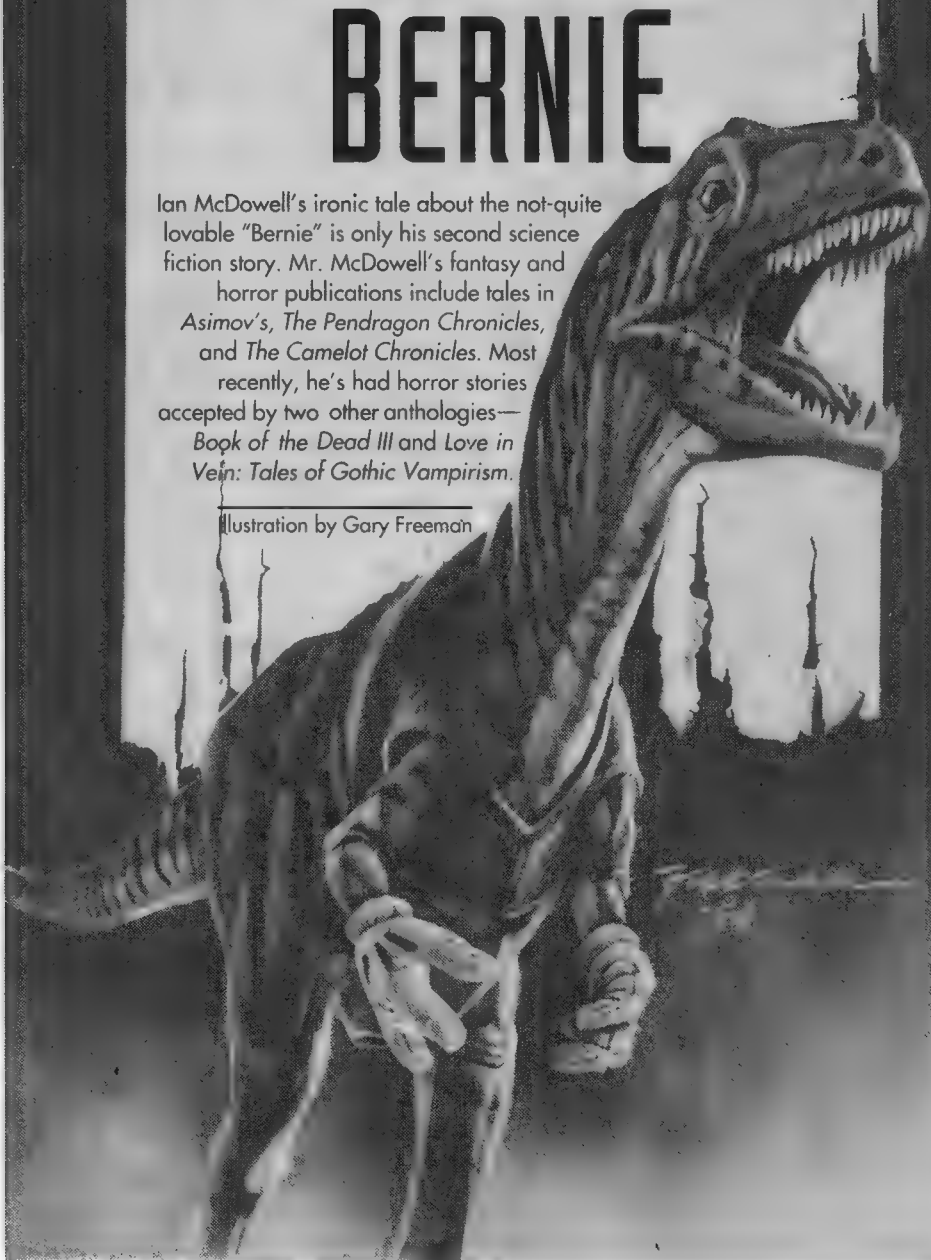


Ian McDowell

BERNIE

Ian McDowell's ironic tale about the not-quite lovable "Bernie" is only his second science fiction story. Mr. McDowell's fantasy and horror publications include tales in *Asimov's*, *The Pendragon Chronicles*, and *The Camelot Chronicles*. Most recently, he's had horror stories accepted by two other anthologies—*Book of the Dead III* and *Love in Vein: Tales of Gothic Vampirism*.

Illustration by Gary Freeman



Varla stared at the plastic carapace on Steve's desk. "Look, it's weird enough that our client is a six-foot-tall iguana, but do you really expect my team to work dressed up as Ninja Turtles? We're bodyguards, not kiddy show performers."

Steve grimaced and scratched his peeling nose. He'd just come back from the Bahamas, where she hoped he'd caught enough UV radiation to cause a melanoma. She hadn't had a paid vacation in two years, and she and her team were the ones who did all the real work.

He wasn't meeting her eyes. "First off, Bernie isn't an iguana, he's a genetically reconstructed deinonychus. . . ."

Varla popped her nicotine bubblegum, a vile habit she'd acquired in her umpteenth attempt at giving up smoking. "I know that, Steve, I was just being rhetorical. But why the goddam turtle costumes?"

He sighed and scratched his nose again. Clearly, the idea embarrassed him, too, and he wouldn't even have to wear one of the stupid outfits. "Disney wants us to keep a low profile on Bernie's tour, just like their own security people do at their parks. The masks and shells will disguise your helmets and body armor, and not alarm all the parents who've brought their brats out to the mall to see their favorite TV dinosaur in person. Just be glad Disney acquired the Turtles last year. You guys could be having to dress up like Mickey, Minnie, Donald, and Goofy."

Varla, who'd been pacing in outrage, settled her six-foot-two frame back into the vinyl chair and brushed black bangs out of her eyes. "Who are they so worried will be gunning for the big lizard, that they want us in full armor? I didn't know he was on any pro's hit list."

Steve fingered his remote and a holo freeze-frame of Bernie began slowly revolving in the air above his desktop. At one-fifth scale, the image shouldn't have been particularly threatening, especially with the oversized purple Nikes and the balloon-like three-fingered gloves hiding his ripping talons, but his bipedal, stiff-tailed body radiated the same deadly power as a pit bull or a great white shark. Varla had serious trouble associating this brutally efficient-looking predator with the low-budget Bernie of her childhood, the sashaying actor in a baggy purple suit who sang nerdy songs about caring and sharing.

"They're not worried about terrorists," said Steve, his glasses reflecting the green and purple holo. "Just some crazed fundamentalist with a Saturday night special, who thinks reconstructed dinosaurs are a Satanic plot to undermine scripture. But suppose some loony does pop out of the crowd and take a shot at him? What does your team do, if the guy's not close enough to take out?"

Varla considered the matter. "Same as with a human client, I guess, get Bernie out of the line of fire."

Steve nodded through the holo. "Exactly. You'll have to dogpile him

to get him down, and he won't like that, despite the tranquilizers. His teeth have been replaced with rubber implants, and the gloves and shoes will keep him from using his claws, but he could still do serious damage. The armor's as much to protect you from him as from flying bullets."

Varla put her motorcycle boots up on Steve's desk. "Great. If Godzilla here panics, he may try to kick our heads off. He looks strong enough to do it."

Steve nodded. "He is, no matter how much padding there is on the bottom of those giant shoes."

Varla dropped her gum in Steve's waste can. "When do we meet him?"

The combination ranch and studio was spread over a good sixty acres of Texas scrubbrush. They passed through three successive checkpoints, the last manned by two ruby-toothed, Baby-Eagle-toting *cholos* in Mickey Mouse baseball caps, who directed Varla to park beside the purple barn, where Bernie's handler waited to meet the team.

A cluster of dirty white chickens scattered before the Range Rover, then regrouped, clucking in indignation, as Varla jumped down and stretched her cramped legs. The handler turned out to be a lanky woman in overalls and a EuroDisney T-shirt, with curly red hair and an infectious grin. "Jill Thompson," she said as she stuck out her hand, obviously bemused by having to look up. "God, I thought *I* was tall."

Varla smiled at that. "Varla Satana," she said as she shook Jill's hand. "And these are my guys, Tim, Dariush, and Tasha."

Tim and Dariush grinned and nodded, and Varla could tell they thought Jill was cute. So did Tasha, from the cold look in her big Walter Keene eyes. Tasha and Varla were intermittent lovers, and Tasha tended to pout in the presence of women she thought Varla might find attractive. Varla wished she'd get over herself. She was already pissed at Tasha for demanding they stop three times on the way to collect sun-bleached cow skulls.

Jill shook Tim's big hand and Dariush's small one, and didn't seem to notice that Tasha had not extended hers. "Pleased to meet you all," she said as if she really meant it. "Let's get inside the barn where it's cool."

Inside were bales of hay, various tools, a Honda autotractor, an ancient refrigerator and four Emery Express crates containing armored Ninja Turtles costumes. Tim and Dariush scowled at the last items, but Tasha, for some perverse reason, smiled impishly. "It'll be like dressing up for Halloween," she said, idly kicking one of the crates with the toe of her scuffed red cowboy boot.

"Not today," said Jill. "I know the last thing you want to do is to climb into those costumes after a long drive. Besides, you won't start the real

work with Bernie until tomorrow." She strode over to the fridge. "Today, all each of you need is a dead chicken."

Not sure she'd heard correctly, Varla walked over to see. Sure enough, the fridge was stuffed full of whole chickens, complete with feathers. "What are those for?"

Jill handed out rubber gloves, then chickens. "The way to Bernie's heart is through his stomach. Come with me out back and you'll see for yourself." Giving the last carcass to Varla, she strapped on a holstered dart pistol.

The back door of the barn opened into a large, electric-fenced enclosure. In the distance was a stand of post oaks and a small pond. Four men were waiting outside of the door. They were Mexican or Indian, in their mid-thirties to early fifties, all in jeans and work shirts. None of them was more than four and a half feet tall. They carried long metal and rubber poles with copper electrodes at the end, like extended cattle prods.

Tasha, never big on social graces, barely repressed a giggle, while Dariush and Tim exchanged a puzzled glance. Varla cocked an eyebrow at Jill.

Jill was clearly trying not to smile at their reaction. "Yeah, we hire a lot of little people to work with Bernie. Have you ever seen how a dog or cat that's grown up in a household without children reacts to kids when seeing them for the first time? Usually, it's with hostility or terror. They aren't used to people being that small. Child labor laws won't let us have kids working here, but having little people as ranch hands discourages him from thinking humans this size are potential prey."

"Where is the big lizard, anyway," said Varla. Standing there with a dead chicken in her hand, smiling at midgets, she wondered if this job could get any more surreal.

"He's not a lizard," said Jill with the tone of one who'd explained this many times. "He's a theropod dinosaur, as much like a bird as a reptile."

"Sorry," said Varla, used to a specialist's pedantry. "So where is the big rooster?"

Jill put two fingers in her mouth and whistled. Moments later, Bernie whistled back as he came trotting out of the trees.

Big, taciturn Tim let out what might have been a gasp, while Dariush gave his own low whistle. Tasha clapped her hands. "He's beautiful," she said.

Jill grinned. "Isn't he, though?"

Varla had to admit she was right. Bernie was surprisingly graceful as he loped toward them, his long muscular tail stuck out rigidly behind him, his narrow head held erect, his large amber eyes as coldly intelligent as an owl's. His coloration, a neon, almost fluorescent green, with

broad maroon stripes on his sides and narrower orange ones criss-crossing his belly, should have been garish, but somehow wasn't. Seen like this, without the white gloves and purple vest and shoes he wore on TV, everything was perfectly in balance, a work of nature's art that couldn't be improved on.

Varla estimated his overall length at just under four meters, which meant that his eye ridges came up to the level of her chin, and he looked like he weighed one-eighty, maybe two-hundred pounds. Certainly not big, as dinosaurs went, but plenty formidable for all that. His forelimbs were long, much more so than those of his distant cousin *Tyrannosaurus Rex*, and armed with three huge claws. His feet were also three-clawed, the middle being a six-inch bladelike talon that was raised off the ground. In his natural state, she had read, he would stand on one leg, balanced by the stiff tail, and grip his prey with his foreclaws while using his lifted hind foot to rip open its belly.

The midget ranch hands flanked them on either side, their poles ready, but Jill waved them back. "It's okay, Pablo," she said to one of them. "These people are professionals. They're paid to take the risk." She walked forward. "How's my pretty boy today?"

Bernie closed the space between himself and her with a fifteen foot leap. Dipping his head, he butted her gently in the thigh, and she scratched him behind the exposed membranes that were his ears. "Caring is sharing," he said in a high, reedy voice.

"He really does talk," said Varla softly.

Jill nodded. "Not only is he about as smart as an African Grey parrot, but he has the same mimicking ability. I just wish the stuff I have to teach him to say wasn't so fucking inane."

"What about the singing?" asked Dariush. "My sisters' kids always sing along with him on TV. I never heard a bird sing that well."

Jill scratched under Bernie's chin. "Most of what you see on TV is computer simulation, but he sings during live appearances, too." Her expression grew pained. "That's done with a surgically implanted speaker. I hated that they did that to him, believe me. But what's a girl to do? If I protest too much, they'll fire me and hire someone else to babysit him. I try to give his corporate owners what they want while taking the best care of him I can."

Bernie looked up, fixing his glittering eye on Varla. "Friends are forever!" he said as he hopped forward.

"Better give him the chicken, Varla," said Jill. "Toss it, don't hand it."

Varla didn't need to be told. Bernie snapped it out of the air and began to chew on it. His rubber teeth might not have been much use, but his mouth was hard as a turtle's, and the chicken was pretty much pulped

before it went down. Cocking his head to one side, he drooled bloody feathers and looked expectantly at Dariush, Tim, and Tasha.

Three chickens sailed through the air almost simultaneously. Bernie caught one and gulped it down without chewing while the other two bounced off him. He kicked one back into the air like a kid playing hackey-sack, swallowed it, then dipped his head to snap up the other.

Jill casually ran her hand along his muscular neck. "You can pet him now. His favorite spot is right behind the ears."

Gingerly, they gathered round. Bernie cocked his head from side to side, his large eyes blinking, the curve of his heavily muscled jaw giving him a crocodile's fixed smile. Varla was fascinated by the elegant geometry of his scales, their intricate patterns as regular as a digitized image. His skin felt like supple, carefully worked leather, and was warmer to the touch than any of the snakes and iguanas she'd owned as a child. The muscles under it could have been carved from marble, except when they flowed like water.

Bernie snuffled at Varla's leather jacket and Tasha's beaded purse. "Oh, shit," said Tasha, "he's *tasting* me," as a tongue the color and texture of a slab of calves' liver flicked out the end of his snout.

"Not really," said Jill. "What he's actually tasting are the scent particles in the air. His olfactory senses are better than the literature led me to expect."

"How many of these reconstructed dinosaurs are there now?" asked Dariush.

Jill frowned. "I'm not really sure. There's the deinonychus pack in Orlando that produced Bernie, and they're developing an apatasaurus herd in California. Disney's had less luck overseas; the Hokkaido park has yet to see any results from their seismosaurus project, and after the tyrannosaur debacle the French are sticking to Pleistocene mammals. Maybe a half-dozen zoos have adult specimens; I'd say there's about two hundred reconstructed dinosaurs worldwide. Less than there were last year, before that Macaw virus destroyed the Honduras preserve."

Tasha giggled as Bernie sniffed at her head, fascinated by the metallic sheen of the dye in her buzzcut hair. "How'd you get this job?" she asked, her initial hostility toward Jill evidently dissipated.

Jill grabbed hold of Bernie's dewlap and tugged him away from Tasha's reflective scalp. "Sorry, he's like a parrot, fascinated by shiny things." When she rubbed the wrinkled throat pouch between her palms, he tilted his head up and closed his eyes, looking for all the world like he was trying to purr. "I was Jacob Abrams's graduate assistant at UCLA, and I went with him when he took over the deinonychus project." Her face clouded over. "Jake died during the Manhattan quarantine. Bernie was little more than a hatchling. When it turned out he responded better to

me than anyone else, Disney put me under contract as his permanent keeper. It's not a bad life, considering. We tape footage for the shows and videos and VR disks right out here, all the reference material for the computer guys who put Bernie's image through its paces. Two or three months a year we go on tour. At least I don't have to work at one of the damn parks. You guys are freelance, right? Outside security hired for the tour?"

Varla nodded.

"Be glad the Mouse is not your master. The perks are good, but the corporate culture sucks."

Tim stuck out a tentative hand and stroked the bony ridge on the back of Bernie's neck. "Disney seems to be buying up everything these days. At least, everything the Japanese and Koreans don't already own."

Jill shrugged. "Well, if they hadn't bought up the Bernie franchise, he might still be some guy in a baggy suit, and I'd never have gotten this job. Hey, watch it!"

Bernie had noticed Tim's earring. He nibbled at it, causing Tim to cover his ears with his hands and step quickly back. Jill rapped Bernie's plated snout. "Stop that, you oaf!"

Bernie cocked his head and blinked, his mouth frozen in that disconcerting smile. Pablo had come up with his stun pole, but Jill shook her head. "It's okay. If he's going to be a bad boy, he can play by himself for a while."

Bernie suddenly hissed like an air brake and swiveled his head around. Something had moved a hundred feet away, halfway between them and the stand of trees. Squinting in the harsh sunlight, Varla shaded her eyes and saw a rangy jackrabbit, sitting up on its haunches to look at them, its nose quivering in the air.

There was no obvious transition. One instant Bernie was still, his head doubled back, looking down his own spine at the rabbit; the next, he'd spun completely around and was bounding through the air like a kangaroo that had been shot out of a cannon, his charge kicking up a cloud of orange dust and showering Varla's team with a hailstorm of clods. He was almost halfway to the rabbit before it had even moved.

Jill stepped forward and took Varla's forearm. "Back inside," she said quietly. Looking over their shoulders as they were hustled back to the barn, they saw the chase was short, with Bernie catching the rabbit after two zig-zags. One taloned foot stamped it screaming into the dust, impaling it on the big raised claw. Standing on one leg like a stork, he picked it daintily off his foot and wolfed it down.

Pablo and the other hands followed them back inside. "Sorry," said Pablo to Jill, "those damn rabbits keep burrowing in."

"No big deal," said Jill. "We were done with him for the day." She

turned back to Varla. "I'm sorry about that. Did you ever own a pet snake when you were a kid?"

Varla frowned at the apparent non-sequitur. "I look like the type, huh? Yeah, I had lots of snakes."

Jill walked toward the fridge. "Any of them ever eat anything other than live food?"

Varla remembered Stanley, six and a half shimmering feet of blue-black Florida Indigo snake. "One. I bought him turkey necks at Kroger's when I couldn't afford rats. He'd take them right out of my hand."

"But you didn't try giving him live rats by hand, did you?"

Varla shook her head vigorously. "God, no. I didn't dare stick my hand into his cage for at least thirty minutes after dropping in a rat."

Jill opened the fridge, tugged a twelve-pack of Kirin out from under the mass of dead chickens, and handed everyone a beer. "Bernie's the same way. It's like he's got two separate buttons in his head, an 'eat' button and a 'kill' button. Showing him a dead chicken, or any kind of nonliving food, that pushes the 'eat' button; he gets greedy, but basically he's fine. But if he sees potential prey scurrying about, that presses the 'kill' button. Believe me, you don't want to be around him then."

Varla remembered how Stanley, normally about as active and vicious as a scaly kielbasa, was transformed into a lightning-fast hunter at the sight of a quivering rodent. "No, I imagine not." She used her sleeve to wipe damp feathers off the beer can and pulled the tab.

A month later, Varla was on a loading dock outside Four Seasons Mall in Greensboro, North Carolina, finishing the chicken samosa and frozen lasie she'd bought at the McDonald's inside. Pulling off the sweaty T-shirt she wore over her green tights, she used it to wipe samosa crumbs from her face, then began strapping on her body armor. Beneath the outer kevlar and molded ceramic chest plate were bubble cells of liquid chloro-fluorocarbon. Having the cold, fluid-filled plastic near her skin felt like wearing a vest made from half-frozen Chillee Willies, not an unpleasant sensation in the sweltering July heat. Over the armor went the painted plastic shell, her holstered Astra A-85 accessible beneath its lower lip. Sitting on the steps to the dock, she pulled on the stupid two-toed boots. They'd drawn the line at gloves, so she rubbed green makeup over the backs of her hands. Last would be the helmet and wide-angle goggles and the stiff plastic mask that fit over them, but she was leaving all that off until it was time to go inside. God, but she wanted a cigarette.

Tim emerged from the van in full getup. Not for the first time, Varla thought that his long, biker-style beard and hair must be damned uncomfortable under all the stuff on his head, but with typical stubbornness,

he'd refused to trim them. The domino "mask" painted around the eye-slits of his turtle headpiece was red, but she'd forgotten which one that meant he was. None of the kids expressed much interest in them, anyway. They knew that, unlike Bernie, the turtles were just people in costumes.

"All ready?"

He cocked a big green-smeared thumb toward the trailer. "I don't know what's up with Jill and Bernie, but Tasha says everything's cool inside the building." Filtered through the electronics in his mask, his normal baritone went up an octave.

Sighing, Varla finished her lasie and donned her own headgear for confirmation. "Lots of screaming kids and stressed-out parents waiting," buzzed Tasha's voice in her helmet, "but no sign-waving Christians." That was good. North Carolina was hardly the buckle of the Bible Belt, but a small contingent of fundamentalists had picketed them last week in Charlotte.

Everything seemed ready, so she tucked her seven-foot plastic and steel imitation of a Japanese bo stick under her arm and knocked on the side of the trailer, giving Jill the all-clear sign. There was no response. Tim shrugged. "I don't know why they're taking so long. Maybe there was some trouble with his dosage."

Opening the door on the back of the trailer, Varla stuck her head inside. The smell immediately explained the delay. Jill was kneeling behind Bernie, wiping beneath the base of his tail with a handful of paper towels. "Sorry," she said through clenched teeth, "But he just took a nasty dump and I have to clean off his cloaca. I hope he's okay; his plumbing is usually more regular than this." Fortunately, she hadn't gotten any green and white dinosaur shit on the nice black slacks and gold blouse she habitually wore for live appearances.

Ignoring Jill, Bernie turned his fixed grin on Varla. "I love you," he trilled, his big eyes more glassy than usual from the tranquilizers Jill had given him. Climbing inside the trailer, Varla stooped beside him and tied his left shoelace, which had come undone. She'd begun to hate seeing him laced into the big, clunky shoes and cartoonish gloves, although she understood the necessity of sheathing those damn talons. Bernie, for his part, didn't seem to mind. All in all, he was a remarkably well-tempered animal, even when not tranked to the gills.

Jill slipped his purple vest on him, and snapped the thin wire that served as Bernie's leash into its catch right behind his shoulder blades. It was actually more than a leash, for it was connected to a buttoned hand grip Jill could activate with her thumb. Should she do so, Bernie would receive a theoretically incapacitating electric shock. Varla wondered if Jill would have the heart to push that button if Bernie became

unmanageable or took a snap at a kid. So far, the question had not been put to the test.

Varla held the door open as Jill urged Bernie out of the trailer. The foam heels of his shoes slapped clumsily against the concrete and corrugated steel of the loading dock, and when Tim punched in the security code, the service door opened with a grinding squeal. Fortunately, Bernie seemed used to such sounds by now. "Friends are better than ice cream," he said, as they entered the blessedly cool service corridor.

Varla and Tim flanked Bernie, their augmented bo sticks balanced on their shoulders, while Jill followed directly behind him, keeping a short rein on the leash. "Okay," said Varla into her mike, "here we come." Up ahead she could hear the murmur of the crowd above the slapping echo of Bernie's giant Nikes.

The service corridor opened onto the mall's central hub, a recessed commons that had once been an ice-skating ring. The area just beyond the corridor had been cordoned off with traffic barriers and uniformed mall security, creating an empty circular space about fifty feet in diameter. It was ringed by a crush of screaming, waving children and grim-faced adults who struggled to restrain them. "Bernie, Bernie, Bernie!" chanted the children, "we loooove you, Bernie!"

Tasha and Dariush were already in position, waving uncomfortably to the crowd in their bulky suits. As usual, none of the children were paying them any attention. Varla hoped Disney had acquired the Turtles cheap, for their glory days were long past.

Varla and Tim joined Tasha and Dariush in fanning out, so that the four of them faced the mob, each taking a quarter of the circle. Last week's picketing in Charlotte had been the only sign of trouble so far, but they were paid to never drop their guard. Like Varla, the other three had sidearms holstered under their shells, and the fighting sticks they all carried were rigged to deliver an electric shock from one end and an anesthetic injection from the other.

Behind Varla, Jill clapped her hands for Bernie to begin his "dance," actually an exaggerated waddle, as she stood in the center of the make-shift ring, extending his wired leash and directing him around her like a show horse at the circus. The crowd of children roared their approval as the speaker implanted in Bernie's throat began his prerecorded theme song.

*When I'm with you,
And you're with me,
We're as happy as we can be!
There's caring and sharing
And hugs for free,
When I'm with you and you're with me!*

Varla didn't turn her back on the crowd to watch Bernie, but she knew the routine. The song done, he would dip his head and bow to the audience, clapping gloved forelimbs together in apparent joy. Indeed, he seemed to like these live appearances well enough, and had yet to prove particularly intractable.

A glassy-eyed young woman in a Bernie T-shirt was lining up the dozen lucky winners in the local "Meet Bernie in Person" contest. This time it would be Varla and Tasha's turn to carry each child forward, so he or she could shake Bernie's gloved "hand." That was the part Varla really hated. Everybody's attention would be on making sure that Bernie didn't decide to bite his young fans, rather than scanning the crowd for potential assassins. Well, she hoped even fundamentalist loonies would hesitate to pop off a shot while kids were in the line of fire. If mall security was doing their job, no adults without children in tow were being allowed into the commons area, anyway.

The first winner was a fat, pop-eyed little boy with short seaweed-colored hair and the kind of acne that usually doesn't hit until adolescence. His mother, who couldn't have been more than twenty, and whose complexion was scarcely better, handed the child to Tasha, who hefted him with an audible grunt. Tasha wasn't very big, and the boy was certainly old enough to walk on his own, but it was better to carry the children rather than lead them by hand, as they were easier to restrain that way, and snatch away from Bernie if he got rambunctious. Behind her, Varla heard the little boy let out an excited piglet squeal as Tasha held him close to his idol, but Varla kept her eyes on the crowd.

Standing next in line was a thin, red-headed little girl with a Bernie nose ring and glittery eyeshadow. She was accompanied by an apple-cheeked, cherubic little man, apparently in his early fifties, with a high shiny forehead and a few cottony wisps of disheveled white hair. His smooth pink belly protruded out from under a faded, shrunken T-shirt of comparatively ancient vintage, for it depicted Bernie in his baggy purple incarnation, rather than as a real dinosaur. The man had one restraining hand on the little girl's shoulder, while in the other he held a heavy-looking Toys-R-Us bag, no doubt laden with Bernie merchandise. "Hey, Uncle Andy, that hurts," said the little girl, but he didn't ease his grip on her shoulder. Despite his fixed smile, there was a cold glint in his eyes.

"Tasha," Varla said softly into her mike, "watch the next guy in line closely when I take his kid. I don't like the look on his face." It might be an adult's normal reaction—both Varla's mother and her mother's lover had despised Bernie when Varla was a child—but you couldn't be too careful.

Tasha returned with the first contest winner. Varla slid her stick into

its socket on the back of her shell and bent to pick up the little girl, who appeared to be about five or six years old. Varla's goggles gave her an expanded field of vision, and as she turned away from the cherubic man, the corner of her left eye caught his right hand as it dipped into the Toys-R-Us bag, to emerge clutching something with a familiar black plastic sheen.

There was no time to pull a weapon, but she was close enough to kick him, and she tossed the surprised little girl away from her as she spun around, some distant part of her thinking she'd just set the company up for a hellacious lawsuit if the child was hurt. Then she was staring down the barrel of a Glock 25 with a penlight laser undersight as the cherubic man, his avuncular smile now a frozen grimace, took a two-handed grip and sighted past Varla on Jill and Bernie.

Varla's green Y-shaped boot connected with his chest and he went over backward, firing into the air, her goggles darkening against the muzzle flash, the huge pistol's thunderous retort ringing in her ears despite her helmet as the skylight shattered far above their heads. She was much bigger than him, it had been a strong roundhouse kick, and the tile floor was slick, so that the impact sent him skidding like a hockey puck into the crowd, which parted screaming to the left and right of him, effectively shielding his prone body from the mall's own security people. She'd surely knocked the wind out of him, maybe even broken a rib, but the little bastard was tougher than he looked, or at least inhumanly determined, for he hadn't dropped the damn gun. Yelling into her mike, Varla reached back for her fighting stick as she lunged forward.

Tasha was drawing her ACP from under her shell, and the little man made the mistake of sighting on her first, even though Varla was closer. The Glock roared again, the .50 caliber round splintering Tasha's carapace, and then Varla was jabbing the point of her stick into the gunman's exposed midriff. The little man *whuffed*, dropped the pistol and went into convulsions as 40ccs of dinosaur-strength anesthetic hit his bloodstream. Varla reversed the stick, smashed it into his groin, and gave him a jolt from the electro-shock end for good measure, but he was already out cold, maybe even dead. She didn't particularly care, although the publicity would be ugly if she'd killed him. The little girl, thankfully unhurt, ran to his side. "Uncle Andy, you tried to shoot Bernie!" she squealed in outrage while aiming kicks at his limp form. Then a mall security officer scooped her up, while another called for paramedics on his portaphone.

Varla turned back to Tasha, whose shattered carapace hissed as it discharged chlorofluorocarbon vapor. Her ceramic chest plate had cracked, but the kevlar stopped the round, the impact triggering a phase change, so that the liquid in the bubble cells absorbed kinetic energy as

it went gaseous, thus acting as a shock absorber, allowing a hundred-and-fifteen-pound woman to be hit at close range and stay on her feet. Thank God she'd taken it square in the chest, and that the Glock had been one of the older semi-autos, so she caught a single round and not a full burst. Tasha said something, but Varla couldn't make it out, despite the augmented hearing in her helmet. People were screaming all around her, as parents scooped up their children and bolted for the exits, slamming into and trampling over each other in their frenzy.

But what about Jill and Bernie? The broken glass had fallen behind Varla, back where they were. Cursing her own stupid negligence, Varla turned and saw that Jill was on her knees, looking dazed and bleeding slightly from the scalp, glass fragments glittering like snow in her frizzy red hair. Bernie was hopping from foot to foot, hissing, blood running from a dozen minor cuts on his neck and flanks. Jill had dropped the handle of his wired leash, and the plastic grip lay between her and him.

Shaking her head groggily, Jill dove for the leash, just as Tim and Dariush closed in on Bernie. That last was a mistake, for he leapt away from them as Jill grabbed the handle but before she could press the button, and when the wire brought him up short, the jack tore loose. Then he was bounding away into the mob, the clumsy shoes making him stumble each time he landed, but not appreciably slowing him down.

"Shit," roared Varla into her mike, "we've got to catch him!" Then she was charging full tilt into the crowd, cursing the awkwardness of her two-toed boots, but plowing through the panicked mass by virtue of her size and strength, hoping to God she didn't trample any kids. The others were behind her, but Tasha and Dariush had much shorter legs, and Tim was stocky where she was lean and rangy, so she rapidly outdistanced them. All around her, chainlink and plastic barriers were sliding in place, blocking off store entrances, while terrified customers crowded inside, their pale faces imitating Munch's "The Scream." The mob thinned out and she saw Bernie ahead of her, pausing to kick at his own reflection in one of the mirrored columns that lined the promenade. Despite the heavy padding on his shoes, the tough glass shattered, and then he was bounding away again, emitting a loud squawking cry like that of a crow amplified by stadium speakers.

The last store on the right was a pet shop, with a tiny corral in front containing a pair of miniature Zebu cattle. Bernie leapt over the plastic fence, grabbed the collie-sized bull by the head, and shook it fiercely. "Oh, shit," thought Varla, "his 'kill' button's been pushed." Still, she didn't draw her gun, for she could imagine the repercussions if she shot him. Maybe he'd stay busy with the bull long enough for her to get close and use her stick.

No such luck. Dropping the dead bull, and ignoring the terrified cow,

Bernie bounded over the fake rail fence and began butting his head against the plexiglass that had slid down over the pet shop's entrance. Muffled by that barrier, dogs barked and parrots screamed inside, while some employees and customers pressed forward for a better look and others, more prudent, crowded back to the rear of the shop.

This wing of the mall ended in the entrance to a Sears Department Store, and there the steel grid had not descended all the way to the grooved floor, leaving about a foot of unobstructed space. Now a tiny little girl in a white dress, with huge eyes and blue and red ribbons in her curly blonde hair, wriggled out from underneath the grid. Bernie was between Varla and the child, and the girl was closer to him than Varla was. "Bernie!" she yelled with glee as she ran to him with outstretched arms. "I love you!"

Bernie cocked his head and watched her come, and Varla screamed in horror, expecting to see him kick the child like a soccer ball, but instead he reared back, opened wide, dipped down and *gulped*, then came back up with her entire upper body in his mouth, her plump legs kicking and her white dress bunched up around his bloodied snout, exposing her Bernie underoos, his jaws unhinging like those of a snake as he attempted to swallow her whole.

This last action had kept him in one place long enough for Varla to catch up, and she slammed into him, ramming the electro-shock end of her stick into his belly. Bernie vomited out the child as he went over backward, his Nikes kicking spasmodically, his cloaca letting go in an acrid spray of sludgy white and yellow fluid. Seemingly unhurt, the little girl rose shakily to her feet, all huge eyes and saliva-plastered hair. "Bad Bernie," she said in a high, tremulous voice, "bad!" Then she was stumbling away, bawling, stooping to scuttle safely back under the Sears barrier.

Before Varla could dose Bernie with the anesthetic end of her stick, he too was on his feet, shaking his head like a woozy boxer, his mouth open and his dewlap unfurled. "Caring means sharing," he squawked, his famous catch phrase sounding shriller than ever before. Then he leapt at her, one foot lashing out in a kick that would have done a champion *karateka* proud.

She jabbed as he jumped, and the injection went home as the padded, size 32 sole of his left shoe smashed into her chest, knocking her onto her back and sending her sliding across the floor, much as Bernie's would-be assassin had gone sliding a few minutes earlier. Her plastic carapace was split neatly in two by the blow, and she felt constricting heat against her chest as the liquid in the bubble cells beneath her armor expanded into gas, but the phase change had done little to absorb the shock of such a widespread impact. She gasped for breath, unable to rise, and then he

was kicking at her hard, stomping on her chest, pieces of the turtle shell breaking off and sticking in the sole of his pounding Nike. "*Caring means sharing,*" he said in a voice like tearing sheet metal, "*caring means sharing!*" One more stomp and she'd pass out, but instead he straddled her, and all she could see was his calf's-liver-colored gullet as his mouth closed over her head.

The helmet would have protected her even if he'd had his original teeth, but his beaky "lips" could crush her throat if he shifted his grip, and one good shake would break her neck just like that of the little Zebu bull. She punched out blindly, first hitting nothing, then connecting with his ribcage. She pounded him harder than she'd ever pounded the heavy bag in her apartment, hard enough that her skin tore on his scales and a knuckle broke on his rocklike ribs, and kept on pounding, but her blows had no effect. Then the grip on her head loosened and his limp weight settled for a moment on her tortured chest before being rolled off her.

Three Ninja Turtle faces bent over her, their painted smiles mocking her pain, polarized lenses peering out impassively from their eye slits, and she heard Tasha's voice in her ringing ears.

"Honey, are you all right?"

She tried to sit up, but the effort cost too much. They eased her back. "The paramedics are coming, boss, just lie still," buzzed Tim's disembodied voice. Looking at them like this, all stooped over her, her own vision dim, she had no idea who was who. For the first time she was scared, scared that she'd been hurt worse than she thought, and might die without seeing their faces.

"Bernie?" she gasped. "What about Bernie?"

Then Jill was bending over her, too, and she was glad for the sight of an unadorned human face, even if the blood trickling down Jill's forehead made it look like her red hair was melting. "He's out," she said, gently squeezing Varla's arm, "your injection did the trick. Thanks for not shooting him." Jill disappeared, presumably to check on her charge.

Varla held someone's green hand and shut her eyes. There were sirens in the distance.

Later, in the hospital, they all brought her flowers, even Jill, and the floral shop delivered a dozen roses from Steve, although she suspected Disney was giving him hell about how everything turned out. It was all over the news, of course, with lawsuits flying everywhere, and she couldn't imagine what it meant for Bernie's future.

"No kids were badly hurt, so the judge ruled he doesn't have to be destroyed," said Jill, idly fingering the stitches in her scalp. "Instead, Disney's selling him. To my Alma Mater. UCLA wants to test his problem-solving and language-learning abilities, and they're hiring me to

work with him. Thank God. I've had enough of show business to last a lifetime."

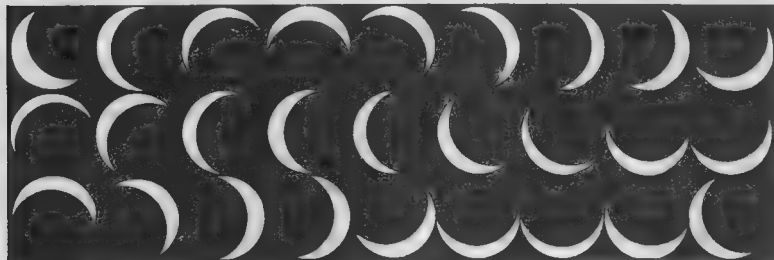
Varla agreed with that. She leaned back in the hospital bed, wishing she could smoke. She was getting out tomorrow, but it would be a while before her ribs and collar bone were fully mended, even with calcium acceleration. "Did you hear the latest shit? The guy who tried to shoot Bernie is suing us, claiming I used excessive force, that the combination of dino tranquilizer and electric shock stopped his heart, and he nearly died."

"I wish he had," said Jill. "What was his deal, anyway? God knows, I've been trying to avoid the news."

Tim twirled his chestnut beard, which for once looked freshly washed. "His name's Andrew Whaley. Used to wear the purple suit, back before Disney owned Bernie. When they got themselves a real dinosaur, he was out a job. Harbored a grudge ever since. He borrowed his sister's kid, bribed somebody involved with the promotion to make sure his niece got one of the 'Meet Bernie' tickets, and used her to get close to him. Pretty cold, for such a harmless-looking little guy."

"He'll get his," said Dariush. "Let's hope he's sentenced before his lawsuit comes to trial. A lot of cons are big Bernie fans. I don't think he'll do very well in prison."

"At the very least, he'll learn a lot about caring and sharing in the pen," said Varla. ●



MOON CANOES

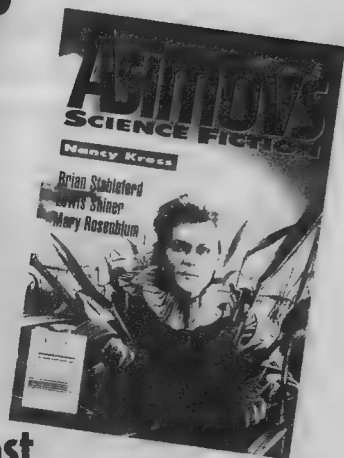
Made of silver the moon casts
onto desert sands

they are the ships of angels
balancing a breeze

—Wendy Rathbone

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LIVING IT

Illustration by Gina Mohr LoParo

Mrs. Magill left her rickety house at the landing and walked purposefully along the main road into Richmond. She had traveled about a quarter of a mile when she suddenly slowed and looked around uncertainly. The James was to her left and Chimborazo Hill to her right. The road was still muddy from the recent rains, but the day was



clear. The sun stood directly overhead.

Noon! she thought in panic. I'm late!

She hurried on. She had never been late before.

After a dozen steps, however, she slowed again. Now where, she wondered, would I be going?

The answer came automatically: To Mrs. Austin's. Of course. Mrs. Austin's.

Mrs. Magill walked on. Six days out of the week for the past several months, in almost all weather, she had risen early and trudged into town to do Mrs. Austin's slave work—cooking, washing, scrubbing, chopping firewood, emptying slops, and generally tending to the woman's needs and those of her widowed sister and two nieces. Mrs. Austin owned no slaves and refused to hire from people who did. "You wouldn't believe what slaves rent for in Richmond," she had once said. She had not quite gone on to say, You wouldn't believe how little you have to pay a poor white woman from Rocketts Landing to do the same work, though on



one occasion Mrs. Magill had overheard her tell a neighbor, "Irish cost less than niggers these days."

At least Mrs. Austin paid cash. Like Mr. Austin, who worked in Bank Street, Mrs. Magill knew the value of specie; from the first, she had insisted on being paid in coin rather than with that worthless Confederate treasury paper. A poor white woman with a husband and three sons off fighting Yankees could just barely scrape by if she had real money and was frugal. Mrs. Magill knew of women who did not have to be so frugal, but they were not as virtuous and God-fearing as she.

She stopped again. A furrow of concentration formed between her eyebrows as she counted on her fingers, Monday Tuesday Wednesday, and then recounted, Thursday Friday Saturday. Saturday had been the day before. Today was Sunday. She did not go to Mrs. Austin's on Sundays. She looked up the road toward Richmond and around at Chimborazo and asked herself, Now where would I be going? Already been to services this morning. Already done my walking for today.

Where, then—?

An answer came, not as quickly as before: To Mrs. Austin's. Yes. To Mrs. Austin's.

She walked, relieved and then not relieved: something still nagged at her. She examined herself and abruptly realized that she had neglected to put on her bonnet before leaving home. Worse, she still had on the soiled apron she reserved exclusively for her own kitchen. "Why, Katie Magill!" She snatched off the offending garment, folded it, tucked it under her arm, looked around mortifiedly. Coming at a walk from the direction of the landing were two skinny horses pulling a wagon; pacing alongside were two shabbily dressed men whom she first took for tramps, then recognized as soldiers. They appeared as indifferent to her existence as the horses.

Where am I going?

To Mrs. Austin's. Where else would I be going? But—

She counted the days on her fingers again. Sunday, it was Sunday. She did not go to Mrs. Austin's on Sundays.

She walked on.

She had traveled some distance when the thought presented itself: It's noon, past noon, I'm *late* . . .

She kept walking.

Ought to be going the other way, she told herself. Need to get home and fetch that bonnet and get to Mrs. Austin's. No. It's Sunday. I don't work for that woman on Sundays. She counted days. Has to be Sunday, but how can anybody tell since the church bells was all melted down for guns?

And what must the good Lord think of *that*?

Chimborazo had fallen behind and Libby Prison was in sight ahead when she turned and began climbing Church Hill. She was barely conscious of anything but the road underfoot until she found herself standing at Mrs. Austin's gate. There was no sign of Mrs. Austin or her sister or nieces, no sign of anyone.

They'll still be at services. Mrs. Magill touched her bonnetless head, refolded the apron, retucked it under her arm. She put her hand on the gate. Perhaps I should go on in and wait for them to get back. She studied the back of her hand: rough, big-veined, with knobby red knuckles and cracked nails. No. Ought to go home. Get my bonnet. Come back later.

I'm too late now.

Never was late before.

Ought to go home.

She turned from Mrs. Austin's gate and took two steps back the way she had come. She stopped, faced west, started walking again, along Broad Street, toward Capitol Square.

As she proceeded, the street began to fill with people. They came from the direction of Capitol Square, by twos and threes at first, then in groups of up to a dozen. Those at the forefront were mostly men and mostly afoot; they hurried along with flushed, frightened faces. Then came the women, who moved with a sort of stunned deliberation, and the children, who looked either scared or uncomprehending. The black faces among the white registered no emotion or too much, caution, hope, expectation, and a lot else, all mixed up together, under pressure, ready to pop. Mrs. Magill placed herself in the path of an agitated white man and asked, "What's wrong?" He simply shoved her aside, and she went sprawling in the street. The man did not slow or even turn his head to note the result of the collision. Someone else passed at a run and stepped on her hand.

Someone else altogether said, "Ma'am, that there's a good place to get yourself trampled," and reached down to take her by the arm and draw her to her feet. Her rescuer wore the uniform of an army officer. He slipped his one arm around her—the other sleeve of his threadbare jacket was empty and pinned back upon itself—and guided her to relative safety at the side of the street. She leaned against a fence.

"What's happened?" she said. "Why's everybody running around so?"

The officer gave her a sad, almost apologetic smile. "Lee's fallen back from Petersburg. The Yankees'll be in Richmond tomorrow or the next day."

"I—I got a husband and three boys at Petersburg."

"Well, if they're lucky, they got out with Lee." He stepped back from her and touched the brim of his hat. "If you can't get out of town, ma'am, I would advise you to return to your home and stay there. Or at least to stay out of the middle of the road."

He's right, Mrs. Magill thought as she watched him go. No need to be here. No need to come into town that I can think of. Body can find enough trouble at the landing without coming all this way to look for more . . .

And Petersburg had fallen, and Richmond was doomed. The news came as no surprise to her. Only fools had not long since admitted to themselves that the war was lost. She did feel something else, however, the familiar icy lick of dread along her spine. For her, the war had nothing to do with states' rights or slavery; it had everything to do with never getting enough to eat, with working harder than she had ever worked before, with—most, and worst, of all—being separated from her family. She had always blamed Satan for these things, and his agent on earth, Abraham Lincoln. And now General Lee was retreating, and Walter and the boys were in the thick of things for sure. She was fond of Mr. Magill, who was decent, sober, hard-working, and she loved her sons, who were good boys, not wild like many. Mr. Magill and her oldest had been in Lee's army since Sharpsburg, her younger sons had joined up when Grant invaded Virginia, and none of them, man or boy, had as yet suffered so much as a scratch. She had prayed them through till now, prayed many times a day, many times more on Sundays. God had enough to do in these times, so she kept her prayers short and to the point. She could barely read, but she had her Bible at home and clutched it fiercely when she prayed, to send its protective power across the miles separating her from her family. She wished she had the holy book with her now. She made do by clutching the apron in her fists and prayed aloud, "Dear Lord, you have been so good to us so far. Please, Lord, don't let anything happen to Walter and the boys. Please please please, Lord, I beseech you. This I pray in Jesus's name, amen."

Prayer gave her strength. She pushed herself away from the fence, thought, Better get home now, and walked on toward Capitol Square.

It struck her that she was the only white person not running, yelling, or crying. As she climbed Broad Street, she saw one shoving match become a fistfight. She did not pause to witness its outcome or attempt to fathom its cause. She told herself again that she ought to turn for home and recalled what Mr. Casey had said about the town, how, since the start of the war, it had become paradise for thieves and Cyprians, and that it was a wonder God had not sent His wrath down on it.

Now, perhaps, God had. While still some distance from the square, Mrs. Magill noticed smoke curling in the air above the capitol building. When she reached Capitol Square, it and the streets bounding it were packed with people. They ringed bonfires on the grounds and watched sullenly as government clerks fed paper by the armload and the crateful into the flames.

Mrs. Magill threaded her way through the crowd to the steps at the

base of the great equestrian statue of George Washington. Her feet hurt, and she was drenched with perspiration. Her faded red hair was plastered to her forehead and the back of her neck. She sat fanning smoke away from her face and wondered what had made her come here. She could not imagine the reason. Already done my walking for today. She glared around at the crowd. Seen better Sunday-best on corpses than the quality all wears now. Look downright shabby. You'd think black was the only color left.

But I guess almost everybody's lost somebody by now.

That concession put her in mind of Mr. Magill and the boys again. The idea that they were probably in greater danger now than they had been throughout the long siege at Petersburg, that they could be hurt at any moment, even killed, caused her a pang of longing as sharp as a sliver of glass. She bowed her head and prayed, "Dear Lord, watch over my husband and three boys and protect them from harm. This I pray in Jesus's name, amen."

A shadow fell upon her. She looked up to see a flashily dressed man with spiky waxed moustaches standing directly in front of her. He had his hat cocked back on his head and both thumbs hooked in the lining of his waistcoat. He grinned down at her and said happily, "Mrs. Magill, as I live and breathe."

She did not like his looks or his manner, and she was quite certain that she had never laid eyes on him before. He must have read that distaste and that certainty in her expression. With his thumbs still hooked in his waistcoat, he lightly patted himself on the breast and said, "You can call me Randall." As she was about to protest, to show this Randall that even a poor woman recognized a presumptuous rascal when she saw one, he added. "You're right on schedule. Microwave."

He had spoken just loudly enough for her to hear. She sat back, hard, and placed both hands on her bosom. It was as though something had burst inside her; her heart pounded, her ears rang. She struggled to rise, but an invisible hand held her in place. She opened her mouth to speak but could think of nothing to say.

"I'm the senior half of the retrieval team," said Randall. "Just relax. The others'll be along soon."

She found her voice at last. "I don't know what I'm doing here. I want to go home."

"You are going home."

"I didn't want to come here."

"You were obeying a post-hypnotic command to come here."

"I kept thinking I had to go to Mrs. Austin's, but I don't go there on Sundays."

"That was just your mind—Mrs. Magill's mind, I mean—trying to

rationalize a sudden urge to hike across town. Everything's going to be okay." He surveyed the scene before them, and when he spoke again there was a cool, detached sort of amusement in his voice. "We don't want to hang around any longer than we need to. Things're only starting to get crazy here. We'll watch the last act from a safe place," and he unhooked a thumb and aimed it skyward.

Mrs. Magill studied him carefully. With his flashy clothes he could simply have been a representative of any of the unsavory professions that had ensconced themselves in Richmond in the past four years. But he was something more. She felt it. The only individuals who would *enjoy* the scene on the square were Yankees—all except one. And only that one had the unholy power to hold a body helpless with a word, a look. She trembled. "I know you now," she said. "You ain't no angel. You're the devil. You'll be going the other way," and she pointed at the ground.

Randall laughed softly. "It takes a while to readjust, but you will readjust. You've done it before."

Mrs. Magill knitted her fingers together and prayed, "Dear Lord, save me, I am just a poor sinner, Lord, but deliver me from the devil. Protect my family, too, Lord. This I pray in Jesus' name, amen."

Randall examined his watch and told her again to relax. She did not relax. She resumed praying, working variations on her basic appeal to Heaven, Save me from the devil, Lord, and don't let Walter and the boys get hurt. The devil regarded her with a devil's mock-compassion. She raised her voice. He sighed and moved slightly away from her. His discomfiture heartened her.

After several minutes, a hatless middle-aged man stumbled forward. His coat was torn, and his face was dirty. Randall flashed the same grin at him, spoke the same strange word to him in a low voice, and steered him toward the steps. The man gingerly lowered himself onto a spot a few feet from Mrs. Magill but did not speak to her or look at her.

"Pray with me," she exhorted him, "pray for deliverance from the devil." His lips twitched, but his eyes focused on something about halfway up the sky.

Next came an old gentleman with two small children in tow; all three were in tears. Randall greeted them as he had Mrs. Magill and the hatless man. Two spinsterish women arrived, shepherded by a young one with pretty auburn ringlets. She exhibited none of the perplexity that her charges did. She guided them forward and propped them against the base of the statue—like the old gentleman, the two elderly women were quality and would not sit upon steps. Then she sauntered over to Randall and gave him a gentle but unladylike slap on the upper arm and said, "Who's not here?"

"Potter and Denton."

The young woman ran both hands down the front of her clothes and began pulling at them.

"Stop playing with yourself," said Randall.

"Damn stuff. What'm I *wearing* under this? Feels like a whole lingerie shop." She smirked. "Never had a woman host before."

"The experience'll probably turn you queer. Now behave. Try to act like you belong in the nineteenth century."

The hatless man, the old gentleman, the two children, and the two old maids sat or stood by numbly while Mrs. Magill continued to pray loudly and repetitiously. The young woman cocked an eyebrow questioningly at Randall, who said, "She's fighting it."

"How can she fight? She can't even know what she's up against."

Randall shrugged. "Kid, sometimes they fight it. Must be like trying to wake up from a bad dream. She knows she's up against something. It's got hold of her, and she doesn't like it one bit. She thinks I'm the devil."

The young woman called Kid said, "You just gonna let her go on like that? What if somebody notices her crying and carrying on?"

"In the middle of all this commotion? Let her pray if she wants. It'll tire her out."

It was true, Mrs. Magill realized in panic. Her throat was raw, she was growing hoarse. She longed for a drink of water. She warned herself, You'll long for it more if you get dragged to Hell, and made herself pray harder. God would sustain her. The devil ignored her, but his whore suddenly leaned down into her face and snapped, "Don't you think God's *heard* you by now?"

Mrs. Magill glowered back, but she started to pray silently, and to work up a gob of saliva to soothe her throat.

Randall looked at Kid exasperatedly. "I said, behave."

After a time, Kid said, "Maybe Potter and Denton've had an accident."

"Better not've."

Kid sneered. "Civil War freaks."

"They pay the bills."

"Yeah, well, I never knew one who could shut up about how old Stonewall did this and Marse Robert did that. Military freaks in general gimme the creeps, but Civil War freaks are the worst."

"Trust me on this," said Randall, "Third Reich freaks are the worst. Anyway, these folks—" he directed a nod at Mrs. Magill and the others "—are historians, not tourists, and they've been here as civilians, not military. The old gent's been living it since Fort Sumter. Been all over the South."

Two more men separated themselves from the crowd. Randall greeted them, and Kid drew them into the little group huddled in the shadow of

George Washington and his horse. Then Randall announced, "That's the lot," and gestured for everyone to gather around. Mrs. Magill felt the grip of the invisible hand relax. She got clumsily to her feet and stood swaying for a moment. She wanted to run, but her legs would not obey. Randall gestured again, and, helpless to resist, she and the other Richmonders dazedly shuffled into a ragged line.

"Join hands," said Randall.

"Not like it's necessary," said Kid, but she, too, joined hands.

"Database," said Randall.

Mrs. Magill felt a wrenching sensation and gave a little cry of alarm. Then, suddenly, she seemed to be hanging in the air just above George Washington's shoulder. She sensed other presences close by and wondered, Am I dead?

No. It sounded like, or felt like, or in any case seemed to be Randall. You're on your way home, all of you.

Home? My home's at Rocketts Landing.

No.

Yes. Rocketts Landing. And my name is Mrs. Walter Magill. And Mr. Magill—

Your name's Kyra—

—Mr. Magill and our three boys are serving with General Lee—

No. That's Mrs. Magill down there.

Randall directed her attention to a loose knot of people milling around the base of the statue. Among them, looking as confused and lost now as the others had all along, were the flashily dressed man with the spiky waxed moustaches and the young woman with the auburn ringlets. Also among them was a starved-looking woman with faded red hair. The woman was on her knees and had her hands clasped before her face. Tears streamed down her cheeks as she mouthed words, but she was drowned out in the general clamor. In the air above, Mrs. Magill reached down and tried to draw herself to the praying woman, and even as she tried, the life she had believed was her own became, not something she had actually experienced, but something she had only viewed. She cried out, It's all going!

You'll remember it all. It's everything else that's coming back.

My husband! My boys!

Mrs. Magill's husband and boys. You have your own family.

I don't understand. I *don't* understand.

When you got yourself inserted here, we suppressed your awareness of who you really are. You've been riding around in this Magill woman's head, seeing, hearing, experiencing everything she did. Now the war's over, and it's time for you to go home and write your book.

Lifestyles of the poor and forgotten.

That, she decided, had to be Kid's voice, if it was a voice. Before she could reply, however, Randall said, We used words that don't exist in eighteen sixty-five to trigger post-hypnotic suggestions and snap you back. The words also trigger a command that erases them from the host's memory. All those people'll remember is that they were on the scene when the Confederacy finally fell.

They rose in the air, turned, merged with the smoky pall hanging above the city. They could see everything at once and were not conscious of time, though the sun moved with its usual stateliness across the sky. Refugees streamed west and south. Rioting and looting erupted in the warehouse district, and with the fall of night the various mobs of rioters, looters, and people simply trying to get out of town became a single writhing mass illuminated by the many fires that had broken out along the waterfront. The fires merged into a single great conflagration. When the arsenal blew up, a column of flame thrust itself into the sky like the tongue of Hell. Wow, said Kid. Someone else said, My God. Dawn revealed a city choking under an acrid smoky haze shot here and there with an angry orange glow.

Richmond, Mrs. Magill heard herself say—was she Mrs. Magill any more? wasn't she Dr. Kyra Haigh?—Richmond in the last days of the war reminds me of Berlin eighty years from now.

What were you doing in Nazi Germany? There was new respect in Kid's voice.

Same as here. Going in, living it, coming out.

So who lives your life, said Kid, when you're busy living somebody else's?

Don't mind him, said Randall. I can't take him anywhere.

The others' attention settled on the capitol building; two tiny figures had climbed onto the roof and were struggling with the flagpole. She looked east along the James, toward the landing, but could not see the particular rickety house. She looked down at Church Hill and wondered if Mrs. Austin would be expecting Mrs. Magill this morning. It was, after all, Monday. She asked, How long was I here?

Two weeks, said Randall.

Two weeks. She repeated the words painfully, as though she had a throat and there was a lump in it. Two weeks. It felt like a lifetime.

Doesn't it always. Randall sounded sympathetic. Then: What're you doing?

Offering up a little prayer for her, and for Walter and the boys.

Below, the flag of the United States of America snapped open on the wind. The same wind seemed to catch her and her companions and bear them far away. ●

Gregory Benford

SOON COMES NIGHT



"Soon Comes Night" is part of Gregory Benford's extended future-history series that includes *In the Oceans of the Night*, *Across the Sea of Suns*, *Great Sky River*, and *Tides of Light*. These four books will be re-released by Bantam this summer along with a new novel, *Furious Gulf*. The events in the following story link the first two books with a sixth and concluding volume—an untitled book that is now being written.

Illustration by Bob Eggleton



The universe is full of magical things, patiently waiting for our wits to grow sharper.

—Eden Phillpotts,
A Shadow Passes, 1934

1. Worm

The body lay dying for some time before Angelina found it.

She had noticed a small cyclone of birds standing in the air above a churned-up span of smoldering rock and went to look. The small, four-winged birds were predators only in a flock, never alone. They banked on the warm updraft from the oozing soup of sun-orange rock below, peering down with hungry intensity.

The broken body stirred every now and then and the birds would rise a bit, a reflex born of long evolution, for if the prey revived it might be dangerous. Their courage was purely collective. Each would have fled in confusion were it not for the familiar, gene-deep helical churn of their updrafted gyre, which calmed them all.

Angelina found the body folded up, as though broken in the legs and chest. It was a woman in a dark red single-sheathed garment. The pliant weave was ripped and caked with blood already gone brown. As Angelina knelt to help she caught the coppery scent of fresh blood and saw an eyelid quiver. A patch seeped red at the temple.

That made Angelina send a quick comm alert to her brothers, Benjamin and Ito, who came quickly from the house an hour's walk away. They ran it in much less, bringing a sling and medical supplies.

Angelina had stopped most of the bleeding with a tourniquet, but the woman was in a bad way from the heat and dehydration on top of the catalog of injuries: chest a massive purple bruise, chin crushed in, right arm twisted at an impossible angle and showing white bone.

They got her in the sling and worked on the arm before carrying her back over the broken landscape. Only then did the slowly cycling tower of birds, hundreds-strong and chorusing a disappointed *skree-skree-skree* song, disperse into its timid, individual parts. Some still tracked the humans, for scouts were part of the collective genetic lessons as well.

The three had trouble getting back to safer ground and that was when they guessed the origin of the dying woman. Footing was unsteady. From long habit they thought of the solid stuff their boots struck as rock, but knew that the glowing, slippery sheen was the "Esty"—S-T, a compacted form of space-time. The Esty could be firm and dense at one moment and then, rarely though without warning, blur and fuzz into a fog-like film, vital and durable yet flexing, following laws of its own nature, rules unknowable. Or at least unknown by humans of this era.

As they took turns carrying the listless body each of them was troubled by a sense of foreboding. In their circumscribed world this woman had come as a signal flare, an announcement. She opened again the doors of speculation, for they knew the tales of bodies belched forth by the Esty

from places and eras of danger and promise. They did not share these first tingling thoughts, but the air hung heavy between them.

Humans had lived here a long time, shaped by the Esty and knowing it as the frame of their world. Yet it was also an enemy of capricious, almost vindictive spirit. It slipped beneath their boots as they carried the woman, who still oozed blood and pus at her many wounds. Blue-white flashes wracked the air. Vagrant electrical energies plucked at their sleeves like fugitive winds.

They reached their sprawling, ramshackle house. Their father Nigel had returned from the orchard and frowned when he saw the damage. Their mother, Nikka, had their auto-medical equipment rig up and running, shiny and smooth despite its age, but there was by that time little hope.

The woman gasped and choked. Her hot breath whistling past a broken tooth. For a moment she smacked her lips and seemed to savor the flavor of the home: sweet cloves and garlic, aging flowers, damp rags, thick soup simmering in an all-day pot, a woody tang tamed by a sheen of oil.

Her concussion spoke for her then, forcing clogged murmurs and hoarse cries from her raw throat.

"Sky . . . burning . . . get away!"

The family Walmsley glanced at each other. "The others we heard about," Nikka whispered, "they never could talk."

"This one won't for long, I'll wager," Nigel said.

The woman subsided for a while. They moved around her, following the instructions of the artificial intelligence which spoke with a hushed, calming voice. The program had a false note of sympathy which always irritated Nigel, but the family found it reassuring.

Nikka saw the bulge in the woman's optic disk—*papilledema*, the soothing computer voice supplied, speaking of severe damage to the woman's outsized cranium. Fractures ran through the body, as if it had been systematically stepped upon. Cracked ribs and hips and calves, ending in toes snapped off clean. Blood vessels had been raked and cauterized by a tunneling fire. No one knew how to fix these things readily and the computer would not hazard a guess as to their cause. As they inventoried the damage and patched where they could, the woman gave a harsh bark. Her eyes flew open in a kind of discharging overload, and she sat up.

"Grey Mech . . . knows . . . got to . . . sky . . . fire, fire . . ."

She yawned, startled jaws agape with bright fresh pain—and went completely limp. By the time her head slapped back on the pad her life functions had gone flatline.

Nothing Angelina or Benjamin or Ito could do could bring a spark back into the body. She was suredead, the mind blown to shards in a flurry of glows and distortions. They started the small measures which would snatch back some fragment of the woman: circulating her blood with a pump inserted into the bloodstream, reading her cortical map.

"From the Esty," Nigel said as they worked.

"And she mentioned the Grey Mech," Benjamin said. They glanced at each other soberly.

Nigel ran the diagnostics program but otherwise kept his distance. He had seen a lot of damaged people in his time and did not share his children's fascination. "She came up from the wormhole spot, correct?—same as long ago."

Benjamin, the youngest son, cocked his mouth doubtfully. "That body was dead too?"

"A man near here named Ortega found it hanging half-exposed out of a kind of fog-ball, he said." Nigel was quite old now, nearly four hundred of the old Earth years, but remembered fairly well. "That's the only case I ever heard of around here, but Esty history has a few more."

"From that shaky spot in the Lane?" Benjamin shook his head. "But worms, they're like balls, spheres, not like holes in a wall."

"True," Nikka said. "But worms can open up best in compacted Esty. There is more free energy available there, or so the theory goes."

Benjamin stopped working, his hands resting on the blood-spattered table. "So this woman passed through a *worm*? I thought the pressures inside were incredible."

"They are. The body Ortega found was stretched, pulped. From far upstream time," Nigel said.

"Suredead?" Benjamin asked, eyes rapt.

Nigel said, "A few memories, but nobody could assemble a personality from them."

Nigel thought then of the distant space and time from which this cooling woman had probably come. A one-way passage to a past or future unknown, a journey fraught with murderous forces.

Yet she had come. Or been sent? "Bringing something," he mused.

Benjamin frowned. "Bringing what?" With long, bony fingers he searched among the tatters they had cut from the body. "Nothing here but cloth."

Ito was swaddling up the cutting stink where the woman's bowels had loosened in her final clenching agony. "D'you think the Old Ones'll want to look at her?"

"I hope not," Nikka said. "They'll take forty forevers to send somebody out here."

Nigel said crabbily, "I hope she's not going to rot quickly, like the one Ortega found."

Nikka rebuked him sharply, eyes irked in her leathery face. "Don't be calloused."

"Respect for the dead doesn't mean you take risks." Nigel looked a little sheepish over his remark and felt called upon to defend it.

"Full protocols?" Angelina asked. She was muscular and compact from work in the groves and smiled prettily despite the circumstances.

Benjamin said eagerly, "I'll get the readers." As the youngest, just entering adolescence, he sprang to take on any task, to show he wasn't much behind his sister, the middle child. Ito had been that way but lately

had left his teenage years and did not have his bearing straight, Nigel judged, on where to go from there.

All but Benjamin knew about the man Ortega found, who had gone bad in ways—fungus growing while you watched, spores blown off, eyes popping vapor—that had inspired in them childhood nightmares. Even now, nearly fully grown, none of them liked to recall Nigel's warnings and pictures: boils that had sprouted like small glassy domes from the man's flesh, festering purple and angry red. They had burst with wet pops and ejected spongy drops that stuck and had to be scraped off with a knife. And scraped fast—they sought food, boring into flesh.

They made the readings with speed. Nikka checked to be sure the scanning patches were flat against the woman's skull. The moment they were done Benjamin asked with a flat, false calm, "Better get her under the soil, then?"

"No," Angelina ventured. It was not like her to challenge her brothers, but she had found this woman and from the set of her chin Nigel knew she felt some sense of odd possession and responsibility. "What if the Old Ones want it?"

Nigel nodded, obviously to Angelina's surprise. "Talking to authorities, best to keep things simple. Last time they made Ortega and I do the digging-up."

Angelina gasped. "You did?"

"The Old Ones believe in local responsibility. Or seem to—they make their human agents run things that way. I was a neighbor, so I dug—period." Nigel shrugged. "Had to do it in skin-suits. It became a trifle hot. Thirsty work."

All three Walmsley children looked uneasily at each other. This detail their father had not told before. The set of Benjamin's chin said that as the younger brother he wanted his fair share of any decision. "Those scientists, they'll want a full report, do their experiments, take samples. You know how they are."

Nikka's worried frown deepened. "I wouldn't trust our storage. The rot could get out and—"

"Let's put her back into the Esty," Angelina said brightly.

The idea was simple yet stunning. Buried in soil, the body could be recovered. In Esty, never.

They had all been shaken by the erupting of the Esty again, after years of slumbering. The idea of setting foot among the shifting tides of the non-rock, the time-stone, was bothersome. Yet, Nigel saw, none of them wished to show such concern to the others. That zone of the Esty was the stuff of local legend and the children both feared its promise of mystery and adventure and yearned for it. So they agreed. ✓

They processed the readings first. That was all custom required: a scan of the neural beds, of memory vaults in the cerebral cortex, an inventory which could at least establish the broad outline of who this woman had been. Bodies from the future came forth in only a few known spots and it had been Nigel's intention to live near one.

The woman's body had already begun to warp and ooze as they lugged it back into the head-spinning deviations of the rumbling, ozone-sharp wormhole zone. Ito and Angelina carried it with catlike balance, as though ready to leap. Fast, humming high frequencies ran through their shared sensorium, a kind of warning system which linked them. This eruption was just beginning and promised to be big. An acrid scent cut the air. Zephyrs of bitter heat caught at their nostrils and the footing trembled with expectation and menace. They brought the body back to where they had found it, or tried to, for already a gravitational chasm had opened there. A powdery sapphire cloud hovered above the foaming Esty itself. The air torqued them with tugs and pushes.

They steered well clear of the dancing powder. It shaped into elongated cylinders, teardrops, fluted arabesques—which meant it was another manifestation of the far future. A sharp *crack*—and the Esty flexed and slewed like a raft in a roaring river.

This threw Ito down and sent the body rolling, arms flapping, legs stiff and waving like sticks. It spun into the air and plunged toward the spatial fissure. The sapphire fog opened and closed like the mouth of a fish underwater, oval and meaningless. Nigel clung to his children and watched. The body seemed to dissolve, then become compacted and firm again, before managing with the stuff which had only hours before been reliable time-stone. Then it was gone. Consumed, perhaps transported.

"Wonder where it went," Benjamin mused, drawling.

"It's slipping through the Esty—Transiting, isn't that what the Old Ones say?" Angelina asked uneasily, rubbing her gloves on her leggings as if to get clean of the body, its touch and smell. Yet her angular face showed an intrigued, puzzled expectation.

"Going that way didn't seem to hurt it," Benjamin said.

"Something sure did before," Ito said. "Killed her."

Nigel sniffed and jerked a thumb back toward home. "This place will soften up and spread. Happened that way last time. Let's go."

Within a relative hour—though hours could not be meaningfully measured here, and watches were mostly a concession to human habits of mind—the family had gathered around the long polished dining room table, beside the big fireplace where coals flickered and popped. There were no fossil deposits in the Esty because it was not very old, but compacted rock laced with burnable trace gave the same rosy glow.

The dead woman's readings appeared as images deep in the surface of the table, constellations of memories played out as fragments and moments: the ruins of a life. Law required that they see if anything warranted an emergency call to the Old Ones. Nobody talked directly to them, of course. They were shadowy, alien minds who might well have made the Esty. Seldom did they intervene in the affairs of the mere humans who clung to the twisty intricacies here.

When they were through rummaging through shattered memories, curiosity satisfied, only Nigel and Nikka wore grim scowls; the children

yawned, bored. He felt more than ever the centuries dividing him and Nikka from their children.

"Guess the future's not so great after all," Benjamin said, sucking meditatively on his teeth.

"Should we send this stuff?" Angelina asked. She twisted her mouth with a comely lilt, an expression that always touched her father's heart because she still did not know that she was genuinely beautiful. They lived in comparative isolation here, far down a lightly populated Lane, as he and Nikka had planned. Soon enough their children would come to know the torrent of cultures and technologies elsewhere in the Esty.

"Not right away," Nikka said, glancing at Nigel.

Ito caught her meaning. "There's something in here."

Nikka nodded. "Look at these." She tapped her wrist pad and the table top flashed, finding an image: above a black horizon, smudges of rosy light. A sidebar broke this down, displaying bands of spectral light. "See? Pictures made at very high energies. And one strong peak."

Ito was unimpressed. "Astro data. So?"

Nigel said dryly, "That peak is at an energy of 0.511 million electron volts."

Ito shrugged. "Yeah, so?"

Nigel knew his son's casual challenge for what it was—energies contained in a young soul, spurting out in moments of arch nonchalance. "Son, that's a lot of energy to pack into a single photon."

"So?"

"It's also precisely the sum squeezed out when an electron meets its anti-particle, the positron."

"Ummm." Ito frowned, not ready to give up his bored manner so easily.

"Dad, you get interested in just about anything."

Angelina blurted out, "You think this is *anything*? It's antimatter, silly—dying!"

Ito said warily, "How do you figure that?"

"An electron and a positron come together, bang!" She smacked her hands together. "—nothing left but light. *This* light. And look—it fills the sky!"

Nigel smiled, proud of her. To his despair, Nigel's two sons were fine young men with only passing interest in matters technical. Nearly thirty thousand years ago—in strict time as measured by the galactic rest coordinates, not the pliant Esty timeframe—Nigel himself had been a classic science nerd, addicted to his studies. Only later did his attention turn to the immensely larger and more varied world of politics, literature, women.

A classic pattern in the ancient Twencen when he was born. His sons seemed to be going at it in reverse order. Or so the complaints from their neighbors—a half-day's walk away, but with winsome daughters—said.

He studied the pictures. The dead woman had been outside, on a planet, watching—distant galaxies? Forming stars? The patchy clouds might be anything. They spoke of immense energies at work. Where? When?

Nikka said, "The Old Ones will want this—soon."

"Ummm." Nigel gave her a canny glance. "Let's say, the near soon."

Benjamin said earnestly, "But we're supposed to—"

"Right," Nigel grinned, raised eyebrows. "And we always do what we're supposed to."

Nikka looked at him with an expression of tired tolerance. "You wanted to live in a quiet place. It's a little too late to complain about being bored."

"I'm not bored," Nigel countered. "Just a bit curious."

"You said once that you *wanted* to live near that worm thing out there, Dad," his daughter said. "But why? It's dangerous."

Nigel waved an arm, taking in the rolling hills and long, flat-bottomed canyons. "Pleasant, a fine place to bring up children. That worm doesn't act up much. We're pretty safe here, tucked away in a Lane. Hard for the mechs to find. But that doesn't mean we should stop learning. I'd like to see if something follows the woman. If the Old Ones send a delegation, you can be sure we'll learn nothing. Strange things come through these Esty worms and—"

"Your father likes to keep his hand in the game."

"Sounds more to me like that little disagreement with the rock slide," Benjamin drawled.

They all laughed. Nigel had just recovered from a foolhardy skid down a stony creek bed. On a plastic shell he had caromed from one side to the other, unable to stop on the slick runway. When they hauled him out of the pool at the slide's base he had protested, limping badly, that after all, the children had got through it perfectly well.

"You're too old to take risks," Angelina had said.

"If you don't take risks, you're dead anyway but don't know it," Nigel had said sourly, rubbing a pulled muscle and a swelling, bruised knee.

Worms, though, were a bit more than risky. They were an inevitable flip side of the Esty's flexible stability. At a deep level, space-time itself was like a biological system. Anything that provided a niche eventually acquired parasites.

Black holes fed a profusion of particles, a fine spray which popped into existence at the hole boundaries. Similarly, where the Esty thinned, wormholes were born—pulled out of the quantum foam that underlay everything.

Worms could link one portion of the Esty to another, tapping the energy flow between them. They demanded stupendous tensions and outward pressures to hold open their throats. The pressure sustaining a human-sized worm was like that at the heart of a massive neutron star. But a short walk away from it, the effect was not even noticeable. Fields alone held worms open, both magnetic and subatomic, fed by the smoldering energies of the Esty itself.

Worse, worms could even reproduce. They spawned other snaky scavengers, which flicked and twisted between the layers and Lanes of the Esty's hieroglyphic geometries. So they could give birth, just as they

could kill. The lacerated woman had probably died in the worm, sucked in and mutilated.

Nigel pointed out that worms were an inescapable risk of life here, and Angelina made a face. "Aw, you're just trying to say you want to go down the rock slide again."

"I think not, actually," Nigel responded with a grimace to her jibe. "But I wonder . . . did this woman know what she was getting into?"

Nikka arched an eyebrow. "Do we?"

2. Interfacer

They were busy with vegetable farming and the long groves of fruit-bearing trees, mostly from old Earth, and so did not get much time to watch the place where the woman had emerged. The spot fumed, a sour smell that wrinkled the nose from a considerable distance.

Children seldom think of their parents as anything other than fundamental building blocks of the world, givens, like the postulates that go before a geometric proof. With Nigel and Nikka this was just as well.

They had come to the center of the galaxy in a starship, long ago. Measured in flatspace time they were older than they liked to talk about in front of the children. In their own local coordinates they were only a few centuries old, thanks to coldsleep and the relativistic effects of the ramscoop starship. Medical science and good luck had left them feeling still rather spry, but experience gave a certain oblique cast to the expressions that passed between them. The children noticed those, and shrugged them off as more adult mystery.

One day—a term they used by convention, for in the Esty there were wanings and waxings of light, but no sun or stars, ever—a pet got loose and ventured too close. It was a raccoon named Scooter they kept outside on a high wire leash, the end of it strung on a rope between two trees so the raccoon could run back and forth. The bandit-eyed bundle of energy shredded laundry and stole food at every chance and Nikka, angry, would yank it up in the air by the leash. The raccoon would dance on the air until it got the idea of not doing that any more. For a while, anyway.

Nikka would promise to cook it up next meal with the long potato hash she made and the coon would get silent. They knew it could understand. Scooter talked, sometimes. But not well. Nobody thought to warn it about the spot and when it again found a way to untie itself—Benjamin swore the thing was getting smarter—it followed Angelina. The coon ventured too close to the spherical seethe, got singed and lost a finger's worth of tail.

Its squeaky voice complained, "Mad at me. Hurt me."

Nikka noticed that the tail was sheared off cleanly. The worm had snapped at it. The raccoon grumbled but held still for a bandage.

"You ran away," she scolded it.

"Need to study."

"Looks like the worm took a sample to study *you*."

As they laughed over this at dinner Angelina, who kept track of communications, said, "We got a signal today. Orders, really. Said the Old Ones are interested."

Nikka stopped spooning out the tangy long potatoes. "That means some Interfacer will show up in spit and polish."

"Really?" Angelina's mouth formed an O of frozen delight.

"They're just human, like us," Ito said with a sardonic tone just a bit too heavy, to show that he was older and experienced, though he had never seen an Interfacer either.

"I'll talk to some old friends at the Node. Perhaps I can keep us out from under their kindly care." Nigel ate slowly, reflecting as talk buzzed around their table.

He did not like the idea of bringing in higher authority—especially Old Ones, enigmatic beings who had evolved before humans existed. They, or something like them, had made the Esty itself.

Impressive, yes. But it was the nature of humanity to not stand in awe of anything for very long. After many years of exposure to them Nigel felt as if the Old Ones were like nosy mountains, certainly majestic but always looking over his shoulder while he was trying to get something done.

Later he talked on farcomm with Node connections he had, and ran into a wall. Worms were too important to be left entirely to mere humans.

The Interfacer craft arrived during the next waxing. It twisted all over the air like a long mathematical proof the eye could follow only so far, then lost in turning complexity. Air as fluid, craft like an eel. As if Mozart could make his notes visible, lacy in the sky while you listened to them. In the Esty's curved space, travel was never straight-line. It more nearly resembled a slide down unseen ramps of coalesced air.

Family Walmsley squinted upward at the confusing descent. Loops piled like unrolling a scroll. Lacy vapor trail strips unfurled, making one infinitely recurving utterance, cleaving sky like a prow, tossing time and music to each side like a sheared wake. It made their heads ache.

The Interfacer woman who brought the Old Ones' message was not so imposing. Her face was stretched tight, shiny over the bones, so redfaced she reminded Nigel of a boiled ham in a suit. Her collar had popped free of its little pearl clip so that her neck bulged like a swollen snake. Big wrists stuck out of her shirt sleeves and her eyes had the fixed narrow glaze of a woman staring at a match flame. She did not change expression as she studied the seething spot. "A fresh Esty Vor."

"Vor?" Nikka asked, her hands in her hip pockets in unconscious imitation of the woman's stance.

"Slang for vortex. I've only seen two fresh ones in all my years. This data you sent—" the stolid woman waved a disk—"is very important. Very. You should have taken more care with the body."

Nigel said evenly, "We had a lot of picking to do in the orchard."

"No excuse," she spat back. "The data is undoubtedly from the far future. It bears on the destiny of the entire Esty."

"How?" Benjamin asked. Nigel could tell from Benjamin's face that he was impressed, if not by the woman at least by her air craft. Well, time would teach him.

"We know that the mechanicals have been studying antimatter since ancient times. They are constructing elsewhere in the galaxy great laboratories, orbiting the pulsars—all to capture large numbers of positrons. This message, sent in a dying mind—" she waved the disk again as if it were a murder weapon in a trial—"proves that they have designs on the entire galaxy. It shows huge positron swarms. Hostile to life—to our life, anyway."

"Uh huh," Ito said with a lifted eyebrow.

"You doubt this?" The woman looked affronted. "I speak for the Old Ones."

Nigel put a restraining hand on his oldest son's shoulder. Ito did not have the diffidence of Benjamin. "Point is, why send a *body* back?"

"Let us say that the Old Ones have several theories." The Interfacer drew herself up with serene disdain. "Quite complex. They are difficult to convey properly to . . ."

"To ordinaries like us?" Nikka asked with a wise smile.

The woman sniffed. "I do not use such slang. Though surely there is a difference between us. I have touched the Old Ones directly. At the mental level."

"I'm sure it's wonderful," Nikka said.

There was not a shade of malice in her tone but Nigel had a hard time not chuckling at the stiletto of meaning he could read in the words. He and Nikka were far older than this woman, but if he ever got as stiff and dead as her, he would blow his head off. So much for Interfacing with the Old Ones. He had decided not to undergo it when it was first offered, when humanity had first come into the Esty. Now he was reminded why.

"I expect you to tend to the defenses we will set up here," the woman said, still eyeing Nikka for a hint of spleen. Interfacers were notorious for taking offense.

"Defenses?" Ito was surprised.

"Against mechanicals. They may try to cut off this Esty Vor."

Ito scowled skeptically. "Haven't seen a mech around here in a long time."

"They have attacked other Vors and sealed them up."

Nigel nodded, old angers rising in him. Whatever the mechs wanted had to be opposed by natural, organically derived life—that was automatic. The conflict was age-old, more ancient than passing species such as Man. The Esty could not fully keep mechs out, but it could war upon them, resist their incursions.

"There were further views in the data you extracted from the dead woman." The Interfacer held out a viewboard.

In its surface images flickered. A vision of black holes—sharp dots

against a wash of pearly light. The Esty had formed from their collision. The viewboard was an advanced model. Into Nigel's sensorium sounded quick, darting visions.

Locked in a madly whirling embrace, the two black holes spiral inward to a final marriage. As the partners draw closer, they swing around each other faster and faster. Each tugs out the other, stretching the envelope of each hole into a tortured egg shape.

In its last moments, the smaller black hole stretches and contorts its own space-time, emitting a cry of gravitational agony: waves. These curl and lap about the smaller hole, then reflect and refract from the larger one. Eddies form. Standing waves reverberate between the two. These deepen as the moment of death approaches for the smaller hole. Energy foams from the doomed hole, in the form of the deepening trough of gravitational waves that eddy and play in the narrowing gap.

With a final scream of torsion and torque, the smaller hole plunges into its giant master. But the wave energy is not lost. An intense packet of waves remains, lapping in the wash of fatality.

This packet would disperse, bleeding away into space . . . if more matter did not intervene. At this precise moment an exactly directed stream of dense mass comes snaking in along a swift trajectory. In the full form of the General Field Equations—as envisioned long ago by Einstein, and of course by many other of the highest minds elsewhere in the galaxy, for Nature opens its secrets to many styles of thinking—space-time can curve itself. A gravitational wave is an oscillation in the curvature of space-time, like a ripple on the sea. But the equations are not linear. This means that the undulation, too, produces further curvature. Gravity itself has weight.

The incoming blue-white stream of compact mass loops, drawn by the wave packet. Tidal tugs hook the now-incandescent matter into a beautiful spiral. From a distance, the silvery luminosity follows a path recalling the chambered nautilus, a creature born in Earth's ancient oceans, shaped by evolution into a classic geometry.

Now the true violence begins. Soundless, swift and sure.

The mass reflects the gravitational wave troughs, forcing them to build to even higher amplitudes. This draws the mass further in. The spiral tightens. Wave builds upon wave. The stretch and warp of space-time deepens. In a single microsecond comes a new kind of creation: a permanent, self-confined warpage of space-time. Within a second it spreads, an intact structure. Extra energy bleeds away into fleeting waves, radiating out toward unreachable infinity.

Later, men who ventured into it would call it the Wedge. The name was inelegant but partly true. It had been formed by waves wedged between two black holes. It now orbited the single spherical hole, a tombstone of so much lost matter.

But the final drop of mass which applied the crucial touch—that was

not lost. It resides inside the Wedge. It was the first contribution of ordinary matter to the exotic, transparent walls of the Wedge. The first damp earth, in the ceramic flower pot.

"Impressive," Nigel said guardedly. His family murmured, surprised at the intensity of the vision broadcast into their sensoria.

Nikka said, "I've never seen before how it was done. But this is from the past, many thousands of years—"

"There is a date on it," the woman said. "It says that this image is from three billion years in the past."

"But I *know*—"

"Of course." The woman lifted her lip in a regal sneer. "Three billion years in the past of that dead woman. Which gives us the first fix on the origin of these bodies. They come from a genuinely distant future. I am surprised that humans will still exist, then."

Ito said, "Hell, billions—what can matter over that much time?"

Nikka said soberly, "The mechs think something does."

"They certainly do," the Interfacer said. "They sent the Grey Mech to seal those other Vors."

The family blinked and glanced at each other silently. The Grey Mech was the one form which not even the Old Ones could master. It had extraordinary powers and could penetrate the Esty seemingly at will. The mechanical civilizations that dominated the space around the Esty—restrained by its tightrope walk near the galactic center's black hole—did not dare venture in often. But the Grey Mech could. And did, following patterns no one had ever been able to predict.

The Interfacer said quietly, "Why would mechanicals care so much about our origin—except to figure out how to undo it?"

Nigel did not like it, but Family Walmsley had to bow to the Interfacer. Other craft fluttered down the curved air and deposited defensive gear—intricate assemblies of ceramo-metal tubes, tapered carbon-web cylinders, power modules like huge brown bricks. Nigel glanced in the shiny, white steel surface of the control console, then away. One reaches the age when mirrors are of no interest. As well, he had long given up hope of keeping track of technology's relentless march and to him these did not even look like weapons. Nor did the attendants who crisply set up the defensive web, nodding curtly to him, look like soldiers. He was glad to finally see them ride their craft back down the Lane.

The family eyed the defenses skeptically. Supposedly they would keep the worm open by offsetting whatever the Grey Mech could do to it. "Think it'll work, Mom?" Benjamin wondered.

Nikka shook her head. "People have tried such before. But it's like a whip—easy to flip around, until the tail bites you."

"Should we, well, move?"

Nikka was startled. "Our fruit is nearly ripe!"

That seemed to settle matters. The Interfacer had mentioned in passing that the Grey Mech sometimes struck at wormholes only long after they had erupted. No one knew why. Still, it removed any sense of urgency.

So did the very nature of the Esty. It was a self-curved space-time, which meant that it was in the ordinary universe of the galaxy, yet had other connections—to other spaces, other times. The Old Ones used the Esty, had made and confined it, but nothing truly controlled it, any more than a man who cages a lion can necessarily make it perform tricks.

They had a quiet evening, sobered by the presence of automatic weaponry on hair-trigger alert, just over the rise behind the rambling house. War had so outsped human reflexes that battles lasted mere milliseconds. This had a curiously liberating effect, for it meant that no warning or action was possible. So the family went about life as usual, but talked little.

Getting ready for bed that evening, Nigel worked his fingertips along his scalp line where his gray, thinning hair began. He could have changed the gray readily to blonde or one of the more fashionable hues—scarlet, say, or electric blue—but he liked the effect. Carefully he ran his left hand down and to the side, opening his face along a barely visible scar that ran along his chin, around the neck and down his back. Electrostatic bonds ripped free with a sound like corn popping in the next room. He peeled his skin back in a straight line down the spine and drew the flap over his left shoulder and biceps, until he could painstakingly roll it up against his wrist with a moist, sucking sound. The skin stripped back down to his buttocks, revealing moist redness. He turned with exaggerated grace in a ballet pose. “The real me. Like it?”

Lounging back on their massive bed, Nikka laughed despite herself. “Can’t you do your medical some other time? I was just getting in the mood.”

“I’ll recalibrate my secretors. Add some hormones. Give you an even better run for your money.”

“I wasn’t planning on paying money, and I didn’t have running in mind.”

He groaned as he turned digital controls which the peeling had exposed. “A literalist! God spare the sacred erotic impulse from their kind.”

“You expect silky passions after you show me *that*?”

“Fair enough. But trust me to summon up your passion, Madam. My specialty.”

She smiled agreeably. “Hurry up, then.”

He gave her a fond grin as he worked on himself: tuning, refilling small vials, scanning outputs. She was still sinewy and muscular, her skin smooth everywhere but at elbows and knees. Somehow, Nigel noted as he inspected his own, those spots and the backs of hands were not corrected by the elaborate chemical cocktails medical science provided. A minor complaint. Without his in-bodied systems, which he had to tune

in this rather unsettling fashion, he and Nikka would have been dead for centuries.

"How is it?" she said suddenly. Some mute inner pressure had finally found voice.

"Um. Not much change." He turned slightly toward the shadows, so she could not read the indices. On a tiny digital display he used to communicate with his in-body systems a small light winked red. He silenced it with an adjustment, fingers working swiftly with long practice.

"How much change?"

At times like this he was decidedly rankled that he had, from all the flower of womanhood, chosen one with a bulldog tenacity for detail. "A bit. A small bit."

"Which way?"

"Ummm." He shrugged and started packing himself up. He had to shuck his right hand free a bit to get at a pesky lance of veins which had clogged. He pulled the epidermis loose as if he had on a tight glove, pinching each finger free separately. The veins needed a soothing application of some noxious stuff. When the smell was gone he pulled the supple skin back into place, feeling the tabs self-seal with a warm purr.

"It's lower, isn't it?"

He knew that ignoring her would not work; it never had. "It's 172.8."

"A full point down."

He turned back and her face was quite suddenly older, mournful.

"Nothing for it, luv."

"If we go in to those specialists again—"

"They'll nod and probe and do me no good. Remember?"

"It will kill you," she said with abrupt energy.

"Something has to."

"Don't be so goddamned glib!"

"That's me. Deep down, I'm superficial."

"But you just, you just—" and she did the absolute worst thing, burst into tears. The one measure he could never confront with a wry smile and his lofty disdain for the nagging intrusions of life.

So it ended as it had so many times before. He took her in his arms. Simple sympathy and body warmth made up for words. They comforted each other with a knowingness born of time and troubles past. It was a long while before they slept.

The Walmsleys visited the worm seldom because there was plenty of work to be done in the long, stretching groves, amid the sweet scent of crops coming. Seasons of a sort came and went in the Esty and one had to pick fruit when the fitful warming of the timestone brought it to peak. They were in the fields when a hard yellow-white streak raced through the air high above and slammed into the Esty where the woman had appeared.

The weapons of the Old Ones answered. Hard radiation spiked at the edge of Nigel's sensorium. He turned his head—

—a swift sensation of something massive and grey, high up in the air but closing fast—

—A silence swelling like a bubble toward the Family.

—They were loading up a produce truck and the impulse hit before they could even pivot to flee.

Brilliant glare enveloped them. The air seemed to clot—a thick, massive deadening. A flicker wrapped around them like neon rain, illuminated by green sheet lightning—

And when it had passed, the far terrain around them was bare, hostile, steaming with sulphurous vapors.

Machines worked in slivers of seconds which humans could not perceive. Huge energies slice time as they shatter it. The battle between the Grey Mech and the Interfacers' weapons was over—had been decided, transmitted, antiseptically digested by distant minds, its effects calibrated and assessed.

The mechanicals' attack had distorted the Esty. Mere bystanders in the spreading gulp of the reflexing Esty, the Walmsleys had been swept through the wormhole portal, a swerve in space-time accomplished between two thuds of the human heart.

3. The Tilted City

It took them days to figure out, first, what had happened and second, what they could do about it.

The first answer was buried in the fast diagnostics of the Interfacer defenses. Nikka retrieved those. The mech attack had dimpled them through to another place in the Esty. Not merely to the other end of the wormhole, which presumably connected to a far future. Instead, the intensity of the flux of gravitational radiation emitted in the battle had whipped the wormhole to some other location in the Esty.

It had sheared off most of their groves. With them went a lot of equipment and their pet raccoon. A sliced fraction of their original farm sat uneasily in a new place.

Another space, another time. Another space-time.

The second answer was harder to accept: *nothing*.

"We can't, well, reverse this grav gear?" Exasperated, Ito slapped one of the modular cylinders. It seemed undamaged.

Nikka shook her head, tired. She had kept up her technical ability better than Nigel. She could read the interlaced matrices of the artificial intelligence which maintained the Interface apparatus. "It is a defensive net, not a transport device."

Ito had always been impatient with recalcitrant equipment. He busted a knuckle trying to get a seal off one of the smooth, enigmatic cylinders. "How can they leave us stranded like this?" He twisted his mouth in

exasperation while Nigel watched with something like amusement. Nigel had never expected organizations to get him out of scrapes and was quite sure that he was too old to start.

"You have to understand that the Esty isn't just a convenient mass to live on, a source of local gravity," Nigel said. "Such as a planet, for example."

Blank looks. None of the three children had ever lived on a planet. Despite an extensive education, he reminded himself, they could not truly visualize the most elementary aspects of it—an empty blue sky over head, giving way to stars at night that swung around the black bowl in serene circles; raucous weather churning out of vagrant winds, driven by complex vector forces; horizons that always curved away, so that ships showed their masts first as they approached; the very oceans such ships could sail on, implying a colossal lavishness of water; the wholly different sensation of living at the bottom of a gravity well, while above yawned a vast abyss, visible to a glance upward.

"It's rubbery," Nigel said. "And unpredictable."

The fact that they lived in a portion of the Esty noted for its solidity did not lessen this fact, but Nigel saw that in bringing up the children so far from the spongy zones, he and Nikka had perhaps erred on the side of safety.

Angelina objected, "But the Interfacer said—"

"Nobody really controls the Esty," Nikka said. "Not even the Old Ones. It evolves and we live in it."

Angelina gestured upward, where a lightly forested land hung far away, curving behind cottony clouds. It looked as though they were in a spectacular spinning cylinder, pinned to its outer walls by centrifugal force.

But spin did not do the job. The Esty held itself together by folding space-time—by curving itself in unimaginable thin sheets, stacking time and space like pages of a vast book, the events and substance of whole lives and eras encased in walls which felt as solid as granite.

Einstein had seen that mass curved space-time. The Esty reversed the equality, making curved Esty itself feel like mass, planet-solid. A building material. The Esty was far more lively than mere boring matter, for indeed in a profound way it was alive, the compacted stuff of existence which could spawn more of itself. It even had parasites, the worms.

"How can we get back to home?" Angelina asked plaintively.

"We can't," Nikka said flatly. "No gear for it."

"We can't use this, then?" Ito slapped the inert cylinder. He was a fine worker and loved his mother but fire flashed in his eyes when confronted with balky machinery.

"It's defensive, period," Nikka said mildly. "To even attempt a return we need to open the worm in a controlled way."

"How hard is that?" Nigel asked mildly.

She shook her head. "Even experts shy away from that, if they're smart. It's dangerous work."

"What's it take?" Benjamin asked. He had his mother's upturned chin and her quiet assurance that given time and tinkering, miracles were routine.

"Some integrative graviton sensors, a field generator which can deliver a teraWatt at ten kiloHertz acoustic . . . and a Causality Engine." Nikka sat gingerly on a boulder. She had twisted her back in the flickering microsecond of transition through the Vor.

Benjamin's mouth sagged. No miracles were going to happen right away.

Nigel asked skeptically, "Causality Engine? I thought we could take causality for granted."

Nikka shook her head, the sheen of her long, braided black hair catching the light. "It's keeping causality in proper order that takes control."

Nigel had left the ever more complex physics of the Esty to others in favor of his orchards, as a proper reward of age. Nikka still relished technical detail, and it took her quite a while to convey to them the realms of chaotic logic. Daunting stuff.

A Vor was a "chaotic attractor" which linked portions of the Esty in random fashion. But the links had a cyclic logic, so that any given connection would recur . . . in time. Generally, a *long* time. Making it happen again demanded deft mathematical control of the lip of the Vor. The process resembled stirring a pot, using bursts of gravitational radiation.

She was explaining this when a pale pink craft sliced across their clouded sky and banked over them. Its backwash slammed down a fist of heated air, making them duck. It settled a short distance away on oddly angled struts of purple metal that ended in disk footpads.

A woman came rapidly toward them, shanks hiking her forward as though in a race. She wore jet-black, porous ceramic eyes that wrapped around her head like a combination of hat and spectacles, yet left the crown of her honey hair uncovered.

"I'll go set rate," she announced in a peremptory voice, heavily accented in broad *as* and *ehs*.

"For what?" Ito asked. He was nearer her and she seemed to assume he was delegated to speak.

"Don't stall."

"We're not—"

"Look, I be first in. So I get the bid."

Ito looked irked. "First in what?"

"You know not? You've beed inside a suspension bubble. I waited days for it to pop."

Ito frowned. "A . . . time bubble?"

"Checko." She raked them all with an assessing gaze. "You be stable, though. I looked over your chunk from the air. It snapped off a section of ordinary rock. Settled in well, I sayed."

"Where are we?"

"Sawazaki Lane. Your equipment—early era, right? I be good with antiques."

"We tunneled through to a human Lane, though, right?" Ito persisted. Nigel watched his son's expression as the realization dawned that they could just as easily have popped out in some hellhole Lane of methane gas or bitter cold. Nigel and Nikka had known that but, as Nikka had said to him in private, what could they have done? The mechs had sent their sliver of Esty caroming out into the larger Esty, and it had lodged where laws of nonlinear dynamics took it.

"Sure, did you not plan to?" Distracted, the woman glanced at her sleeve. "Ummm. As I calc, I could offer you a single pointo price for all of it."

She looked at him, an entirely phony smile splitting her face, showing bright yellow teeth. "Sight unseen. I willn't bother. Not my style to poke around too much with people standing right there. Don't much need the money. I just take what luck brings me."

Ito gaped. "What? Buy everything?"

"Flat fee basis. Leave or take."

Nikka let her jaw jut out in a way Nigel knew well. "We aren't interested."

The woman frowned. "Look, I know how it is. You must've payed most of your nut to get this big a spread slipstreamed in, right? I'll allow for that, believe me." She rolled her eyes theatrically. "Even though I usually get my budget busted when I do."

Nikka did not smile back. "No deal."

"Huh? You're trans-importers, right?"

"No," Nikka said. "We're refugees."

"Well then, you'll be needing cash, won't you? I can see my way clear to offer—"

"We won't sell," Nigel said mildly.

Her ceramic eyes prowled them. Facets winked as she turned her head, diagnostics probing. She wore a scarf, barely visible above an ivory jacket cut to show one obvious weapon, an antique-looking pistol on its own pop-out handle, and to conceal several others which made mere ripples in her sleek contours.

"You people know not Sawazaki law, do you?" Again the eye-roll. "Lord, protect me from amateurs."

Nigel said, "We were blown here by mechs. Certainly we would appreciate assistance in getting back home."

She brightened. "Well then—"

"With our property intact."

Her friendly bluster vanished. The transformation was so sudden it seemed to Nigel that he saw a wholly new face. Heavy brows tinted auburn, split by a deep frown line. Sunken, brilliant yellow eyes below—visible when the artificial eyes went suddenly transparent. Her hands were ribbed and knobbed like enlarged gloves—which, Nigel realized belatedly, they were—which angled forth fat fingers of obvious strength. He wondered why she needed them.

"Snarfs, eh?" she said in a menacing whisper.

Her gloved hands unsheathed into thin, servo'd fingers which jutted from the sausage-thick ones. Sharp, business-like. "Then you be coming with."

Ito stepped forward, scowling. This was just the kind of problem a young man would rise to, Nigel saw, and in the set of Ito's jaw trouble was coming. Nigel was a half step behind him as Ito began. "I don't think I like the way you—"

—and Ito was on the ground. Nigel had not even seen her move. She had punched him and returned to exactly the same position in an eye-blink.

The city was on edge. Not meaning in a foul mood, Nigel thought to himself as they coasted over, through and around the steepled constructions, but quite literally.

The spired sprawl canted up into the filmy air as though it had been formed in a bowl until it hardened, and then shucked free—so that the curved base tipped nearly all the way over, a crescent moon about to crash down.

But it was at least a hundred kilometers across. It rested on a rocky plain, a colossal ornament on the inside of a spherical bulge in Sawazaki Lane. In the far foggy distance he could see the annular geometry they had emerged from. Tricks of sliding perspective and the sharp dry air made everything here seem miniature.

They banked in and the illusion vanished. The city became a forest of slender spires, jewels jutting up from the curved base. They swelled into thick, serpentine buildings studded with tiny lights: windows.

In the city gravity pointed at "local down" as naturally as ever. Only by walking some distance through the curiously cushioned streets could one tell that the direction veered steadily, accommodating the bowl's curvature. The effect struck Nigel as miraculous.

"How do they do this?" he wondered. "Gravity like hands cupping a baby's butt?"

Nikka frowned but it was unlike her to admit being stumped. "They've figured a way to make the Esty exert gravitational forces and torques at a distance . . . I think."

The woman escorting them, whose name proved to be Tonogan, said sardonically, "We tilt our city for religious reasons. You would not understand."

Nigel could not tell whether she was joking but it seemed an unlikely extravagance. He could see the air shimmer with compressed forces at the city's rim. It occurred to him that if the effect was real, and not some bizarre optical illusion, then it demanded that gravitational waves be radiated from the visible plain below up to the Esty that cupped the city. But gravitational waves of such intensity were incredible. Or so he thought.

He remembered the pictures of the two black holes merging, marrying, and giving birth to something wholly different between them. Maybe the

way to think here was with biological metaphors, not the old physics ones he had learned at Cambridge so long ago.

They passed through crowds whose size, mass, attire (where there was any) and facial gestures ran a gamut Nigel had never seen before. Some were antic, reacting to everything. Others seemed sublimely indifferent to the rabble of the oddly shaped who ambled, meandered, drifted, strolled and marched without apparently acknowledging each other or, indeed, the ordinary laws of physics. Some seemed lighter, making great bounds. Others skated on unseen platforms. (Nigel tried to trip one, but the fellow slid past without a glance and for half an hour later his foot, which had felt no contact, was bitingly cold.) Some flew with outspread arms. Others scarcely seemed to walk at all, but moved forward swiftly on unseen carriers. A passing man lit a cigarette of some sweet-smelling stuff by scraping the knob end against his belt. Nigel wondered what happened if you dropped a whole pack of them knob-down.

Some wore sandpaper-rough clothing to keep people at a respectful distance; a useful urban attire Nigel had not seen before. Despite the noise and confusion, an old game played out: locals were doing their best to accommodate the visitors and relieve them of any excess cash.

A kid slapped a button on Angelina's shoulder and it began to speak. "Done the upshift until you be down? Want to get level? Think pointo and—" Angelina pried off this portable advertisement and tossed it away, where it stuck to a wall and began its pitch again.

Tonogan swerved suddenly into a broad opening in a pyramidal building. The family, gawking, hastened to keep up. She never looked back, apparently certain that they would follow. Inside, the floor propelled them through intersecting streams of men and women with fluorescent neck and ear tattoos, who came and went with bewildering speed, legs scissoring. At a large, ornate copper-sheen doorway stood two well-muscled men wearing wrap-around gray that accentuated their chest and shoulders. They stood rigidly, Nigel noted, and looked quite intrepid.

They were apparently protecting an obese woman in a violently purple bag-dress. She wore skin to match, a near-perfect shade. Yawning, she languidly glanced up as they came through the vertically pivoting door.

"Good waxing." Her voice rippled with polished undertones, as though she truly felt that it was a good rising of the Esty's fitful light and hoped that you did, too.

She went back to looking at a scroll held in one hand. It unrolled on its own and she seemed fascinated with it, not even looking up as Tonogan rattled off a rapid-fire summary. They were standing in a gallery which gave onto an odd courtyard. As Tonogan spoke something like a six-legged dog trotted about courtyard center. It seemed to glide more than walk among the plants which festooned the area—big speckled yellow-green effusions, geysers of leafy abundance.

The large woman interrupted Tonogan with, "I see the scans. A family, um. Quite a large area to translip, eh?"

She looked at Nikka, who answered. "We want help in getting back to our Lane, at our Esty cords."

Nigel felt a quiet pride; ever Nikka, ever direct. Nigel was a doddering language purist, and disliked shortening "coordinates" to "cords" since that obscured a perfectly good word for rope, but he also knew that to crunch the lingo was crucial. The trimmed English here—all verbs and plurals regular, simple constructions—was efficient, where travelers from other areas and territories crossed.

"Impossible."

Nikka said patiently. "Technically it must be—"

"No no! It's *expensive*."

Nikka frowned, always uncomfortable with financial matters. Nigel said, "We could perhaps trade off a bit of our holdings."

The purple woman looked distracted—back to her scroll. Nobody asked them to sit down and indeed there was no place to do so in this long, slick-floored vestibule. She occupied all of a spacious divan, with a bit more of her left over.

Finally she yawned, perhaps not for show. "You haven't nearly enough. Interesting historical artifacts, but—"

"Historical?" Ito took affront.

"Well, you do come from—" a string of digits and words, meaningless to Nigel—"and that's a wayfer."

"Wafer?" Ito asked, his jaw working with irritation.

"Way far gone, as we say here. I speak your approximate regional language, be I not? I had to chipload for it, that be how much trouble I went to." She waved a hand with sausage fingers in airy disdain and went back to her scroll. Apparently the rest of the world was supposed to freeze in place until her attention returned.

The strangely snakelike dog spotted a covey of dappled birds who had waddled out from beneath one of the leafy explosions. It went into a low stalk. The closer it got the slower and lower it went, until finally the birds burst into the sky and the dog dashed to where they had been. Trotting around, it wagged its eellike tail.

Nigel felt amused and comforted by the display. Genes tell, and this echo of Earth was welcome. He remembered pigeons in Trafalgar Square, chased by hounds out on a leash, and the momentary picture brought a dizzy sense of the immense perspectives in this life of his, so long and wearing.

"Ummm. You know anything about holies?" the purple woman asked, one finger held to her cheek, staring at her scroll as though it were a mirror.

Nikka said cautiously, "I know that Esty Vortices are naturally occurring wormholes. No matter what size, they have fixed matter-throughput. But the bandwidth of information—matter, data, anything—that can go through scales up with its radius. The Grey Mech hit us with something—"

"A causality polarizer," the purple woman said, licking her lips with something like relish. "If I could only get one!"

"—and blew us into here. And now."

"Our 'now' be quite a bit downstream of you," the woman said. "You be several million year-kilometers distant."

Nigel blinked. "That much?"

She shrugged. "A moderate traverse."

"Can't you break that up into distance and time?"

She laughed, lips stretched far back, but without real joy. "How old be you? The idea—splitting the Esty—!" A dry cackle.

Nigel felt both awkward and vexed. "Fair enough. We know in principle that space-time can't be just sectioned out, leastwise not here."

"Clocks and feet separate them out pretty well, but the Esty knows what we can't see." There was a kind note in her voice as she asked, "You be old, yes?"

Nikka said plainly, "From Earth."

The purple woman's eyes flared with surprise, then anger. "I try be friendly with you, give you an honest deal. And you think you can play games!"

It was Nikka's turn to laugh. "I'm telling the truth. What do you want, passports?"

The woman's chip did not know the word—indeed, passports made no sense in a multiply connected Esty with no true boundaries—and she waved them away, mouth askew with displeasure.

"You people shouldn't be traders at all!"

Ito blurted. "We *aren't*—can't you get that straight?"

Her eyes blazed again. "You get *this* straight. You take the rate I offer you for your property—buildings, historicals, mech widgets and sensies, the lot—or you'll be punished."

Nigel bridled. "Punished for what?"

"For taking up space, air, time—anything I want!"

She stood with effort, waddling forward on huge feet—a purple wall unaccustomed to collisions. Nigel held his ground. She jutted a large palm out and shoved him. She was massive and surprisingly strong. He staggered back and made a mistake. Without thinking he punched her swiftly in the stomach.

In what seemed the same instant someone struck him from behind. A sharp jolt of electrical violence coursed up through him. Then he was lying on the floor, without any perceptible interval in between. Arms and legs numb. Sounds hollow, distant. Staring up at a cloudy bowl. In a city tipped on end, he recalled distantly.

The purple wall had gone back to her couch. The mists around him fried away, hissing in his inner ear. He looked around and everything was as before. He supposed that Tonogan had shocked him with the rod she held easily in one hand. He let a long breath out and stood, wheezing and rickety at the knees. How to begin?

"And who the hell—" Nigel had an instant of caution, obviously far too late, still trying to size up this sizable lady—"are you?"

"The Chairwoman," Tonogan said. All this time she had been standing at rigid attention, like the two stuffed men outside.

"Chairwoman of what?" Nikka demanded.

"Everything. Just about everything."

"Oh."

The Chairwoman wrapped up her calculator-scroll and glowered darkly. "Pleased to meet you."

4. Eine Kleine Nachtmusik

Ito did his work, hooking up some multi-socketed pipes, and all the while looked off into the distance without saying anything.

When he could wait no more Nigel asked, "All right, what's wrong?"

"You got to ask that?"

"I'm not swift on the subtleties."

"*Subtleties?* Best way to get your attention is with a stick."

They had been working for weeks in menial labor, hauling this, cleaning that. Putting in penance time for the Chairwoman, Tonogan had called it. It was clear that in this Lane the purple woman ran everything with a hard hand, for reasons that remained to Nigel quite mysterious. And he had been forced to concede that she had solidly behind her the brunt of what passed for law here.

Nigel sighed and worked two pipes together, applying sealant. No matter how advanced technology got, there was always grunt labor needed to jimmy stubborn matter into place. No legions of robots or smartened animals ever replaced the general handyman-cum-janitor.

Time to trot out the apology again. "Son, I'm sorry I got us into this—"

"Look, I heard a rumor," Ito said evenly.

Nigel shook his head, bone-weary. He was feeling sour, defeated. "I'm not in the mood for rumors."

Matters had not worked out well between Ito and Nigel for quite a while now. His brilliantly mangled handling of the Chairwoman had not improved the festering tension—inevitable, he supposed—between him and his first son, now coming to manhood.

Ito had bridled at the discipline imposed by the Chairwoman's silent, impassive police. Rough handling. Abrupt dawn awakenings. Long days of scutwork. Adequate meals that had to be eaten in a rush. Little privacy in the muggy, close apartment given them, sandwiched into a brawling tenement. No time off the grinding labor. No chance to get out of the curfew hours, the iron-hard lockup, the rigid lights-out. No access to any media, no contact with ordinary people other than to pick up their trash.

Angelina and Benjamin had borne up well. Nigel and Nikka could take punishment, too, but their oldest son had snapped back at their police "escorts." He had refused to clean up messes when toilet plumbing

broke, swore at the police orders. So the placid police had most politely smacked him around, prodded him with neuro-stims, given him a "seize-up" which locked his muscles in vibrating bands of rigid tension—all while faintly amused. It had not improved Ito's mood.

Not a future utopia, no.

But the future, certainly. The city they glimpsed from the back alleys where they worked was strange and fabulous. As nearly as they could tell, the complex was stratified, with an upper crust which reveled in technowonders, a vast majority which lived ample lives, and a lower caste which did the grunt work. Not exactly a fresh idea.

There were technologies Nikka and Nigel were sure had not existed anywhere in the Esty in their era. So the Grey Mech had slammed them into a future far from their comforts.

Ito persisted. "This rumor, it said maybe the Chairwoman will listen to us again."

Nigel studied his son's face, trying to think clearly despite the spreading ache in his lower back from stooping, and the silent blanket of fatigue that had spread over him. Still an hour left in this work day. "That's not a rumor. Who told you?"

Ito looked edgy as he swept back a greasy tangle of hair. "Tonogan. She wants to see you."

"You've been negotiating with her?"

"Not really."

"Which means?"

"Well, maybe some."

"The Family has to speak with one voice, as you full well know."

Ito chewed his lip. "Well, *you* aren't doing anything."

"I'm waiting her out."

"Her waiting's easier than ours."

"She wants our property. It's probably worth a lot more than you or I think."

Ito flared, mouth twisting. "How can we know *what* to think? We're stuck down in basements and alleys all day, busting our humps, getting flat nothing—"

Nigel sat on a trash can and kicked at a brown flask, still corked but empty. He had never thought of the far future as a place of ordinary junk and grit, much of which a medieval peasant would have instantly recognized.

"Right," he conceded, "It's not playing out well. That Chairwoman—what a bland name for a tyrant!—seems bound by what passes for law here. She can't simply take what she wants. There are procedures."

"I can't see where we have any rights at all."

"This place seems to work through intimidation, rather than rights."

Ito chuckled dryly. "With a frosting of polite brutality, I bet."

Nigel nodded. The family was getting depressed and, quite so, the

Chairwoman could exert arcane legalisms to keep them like this indefinitely.

"Dad, you're in over your head here. That fall you took last week was nasty and I can see you're still limping—"

"Scarcely felt it."

The slow, steady ache in his left leg never left him. Somehow he had not thought that the far future would still have pain in it, either. *I saw too much rosy-visionsed Walt Disney*, he thought tartly. Would anybody in this whole cupped city recognize that ancient name? Of course not.

"So I just took it on myself to talk a li'l to Tonogan—"

"Without telling anyone. Breaching the family's—"

"You weren't doing a goddamn thing to—"

"That's enough."

Tonogan had come into the alley without their noticing. She was sleekly dressed in gray-black, a thin club like a riding crop tapping on her thigh. Nigel gestured to Ito to be cautious.

She said, "I gather from your son that you might be in a mood to renegotiate."

"You're just in time," Nigel said, sitting up straight. "I was about to leave for my exercise at the gymnasium."

"Very funny. Remember, I have your medical indices."

"Not much privacy in this place, is there?" Nigel inquired lightly of his son.

She ignored this, adding, "Including fatigue factors."

"Quite. We really must thank you for a bracing round of workouts. We're getting into terrific condition."

"You would be funny if your situation beed not so pathetic."

"Can't say the same for you, alas."

Tonogan sat irritably on another trash can and said she would like to explain "certain things." Nigel gave Ito a warning glance: be cautious.

As she talked he became reasonably sure that they were setting him up. Not very subtly, either. Greed dulled even keen minds.

He stalled, amused by her impatience. He had known an approach would come but had not suspected Ito as the channel. Still, Nikka had accurately predicted Tonogan's pattern to him, fully a week before. Despite his worn face she would try a bit of coquetry first, perhaps offer him a drink. And here it came, from a thermos, cutting and heady. Then very earnestly, with much show of concern, she would warn him.

"I know not if I can protect you from the Chairwoman."

"Who could?"

"Nobody ever insulted her that way. Much less hit her and lived."

"Surely she's been spanked, at least by her mother. Probably by you, eh?" A slight loft of eyebrow; a little twencen kink, here; see if it translates across the cultural abyss.

"Be serious!" A pretty scowl, not really convincing. "She could have killed you right there."

"She could have tried."

"She be a very dangerous woman. I can help you with her, though. I telled her later that you didn't really mean it."

"But I did."

"You know not what you be doing!"

"Tell her I want an apology."

"You be stranger, but that no excuse." Her eyes jerked in a frenzy of expressiveness. Overacting, Nigel thought. A rather bad case. He yawned.

"Listen, I talked to her, calmed her down. She said that she would accept some of your goods in trade for your life."

"Goods?"

An elaborate shrug. "Some of your gadgets might be worth, well, a little."

"Ummm. That's her final offer?"

"Absolutely. You have a standard day to agree. Miss that and she shows no mercy."

"I see. Tell her I make the same offer."

"What?" Disbelief—genuine this time.

"Give me some trinket and I won't kill her."

"You be *mad*."

"That will come out even. I don't kill her, she doesn't kill me. We'll call the trinkets even, too."

"Insults mean something here. I know not what made you float that ridiculous story about Earth, but wherever you be from, you can not talk this way. And to hit the Chairwoman!"

Tonogan was working herself into a lather and seemed to even believe what she was saying. Astonishing talk poured from her. Nigel never took quite enough account of the fact that people believed in the most ridiculous things, simply because others did, too. Such as the absolute authority of a single fat woman in a baggy robe.

Ito injected, "Dad, stop kidding around. This Chairwoman is the real authority here, never mind how she looks."

Nigel looked at his son and said mildly, "It's what she says that makes me doubt her mental balance. Whatever political system they've got here, it's awry."

Tonogan's perfect yellow teeth massaged her lower lip and Nigel saw he had guessed right; even the Chairwoman's minions thought she was askew. The moment passed and Tonogan said precisely, "I should not speak of such things, I suppose, but . . . she will torture you before you die, do you not realize that?"

"Um." He drew a long face. So things were even worse than he thought. He shook his head. Perhaps Ito's caution had been good advice. Well, too late now.

Tonogan added, "And all your friends."

"Family, actually. Go tell her."

"Your child's! She will—"

"Go." He pointed and she went.

They would come in with all sorts of high tech stuff, of course. Unfathomable stuff. So he went low tech.

There were tinny, ceramic throwaway cans in hallways—people's manners never improved—and he took a bag of them back to the family lair. With spoons stuck in them they were so dumb and so simple an alarm that they might work.

Nikka volunteered doubtfully, "I could see about sealing the doors and windows better."

"Locks're useful only against the slovenly."

"What if they try something when we're working?"

"We're too spread out, in different labor crews."

"You think they'll do something to the entire family? And here?"

Nigel considered. "No, unless I misjudge that monstrosity of a woman. Something to humiliate me and sober the rest."

Nikka sat back, startled. Their tiny "dining" table was chipped and worn and her hands clasped each other with a tension her face never showed. He remembered that this sense of inner forces well marshaled was what had first drawn him to her, long ago. "They'll beat you? In front of us?"

As a matter of fact Nigel thought exactly that. Some methods simply could not be improved upon. This was a strange culture, true, but he was getting the feel of it. Still, to quiet her fears he said, "Too obvious."

"Some techtrick?"

"Fellow on my work gang told me those white rods the police carry are acoustic projectors. The disk at the end focuses a wave at the resonant frequency of muscles."

Nikka shivered. She always hated the description of violence, though when necessity demanded, she could quite easily commit it. "Sounds awful."

"They usually tune it to the frequency of the sphincter."

She made a face. He laughed.

They were tired all the time now. Not physically so much—before, they had all worked long orchard hours and danced late into the night—but from uncertainty and dejection. Their bedrooms were cramped, bare and muggy with damp heat. The only sizable area was the living room, entered by a door off a fetid corridor. A depressing hovel.

Probably a little call after they had fallen asleep, then. *Eine Kleine Nachtmusik*, as Mozart, dead now over twenty-eight thousand years, had put it. A little night music.

Nigel did not see much of a way to get in other than the flimsy front door and the two windows on an air shaft. They were ten stories up the bare sheetmetal shaft, an unlikely approach. Thugs were lazy, in his experience.

The spoon trick would only give slight warning. What real defenses did they have? No weapons better than a kitchen knife.

Against the protests of everyone he took to sleeping on a thin pallet

beside the front door. The door swung open toward the pallet but the uneven floor matting stopped it before it could touch him.

He did not mind sleeping that way, though he did miss Nikka's soft embrace. The pallet was thick enough for his knobby joints and the perpetual murmur of arguments and kitchen racket from the air shaft was lesser away from the windows. He slept there for a week. Sleep came easier and deeper because he was getting more tired from the work and a growing hopelessness. He woke one night and thought somberly of where all this was going and then a clatter came nearby as a can and spoon made momentary music together. The door's slight scrape had probably dragged him up from a fitful dream.

He got up quickly. They would have infrared gear of course but he was shielded by the door. He, on the other hand, had nothing and did not know where they were. He went flat against the door. No sound. They were probably hoping that nobody would rouse, so they could carry out their plan.

They? Something told him there was only one other presence here. A slight whisk of breath from his right. That fit the humiliating beating scenario, all the worse for being imposed by a single thug. Probably the fellow would use stunners to immobilize the rest of the family.

Where was he? In the long moment after the alarm nothing had moved. His heart thudded into its future at a startling pace while his breaths came—shallow, keep them shallow—in a measured six per minute. He strained into the blank darkness.

There—a sudden shadow, stepping fast. Nigel launched himself at the man's back, hit—and slammed him forward.

No point in trying for an injury. Arms around, quick. Don't let him use his hands. A heavy thunk as something hit the floor. Maybe the stunner.

Head down, butt him in the direction he had been going. Another step. Get some push in it. Another. The man's legs were rummaging for purchase, wanting to stop. Midcourse correction here—veer left. Toward the rectangle of light. Nigel knew he could be flipped aside by some martial arts trick but if he kept the speed up—

To the window, the soft glow showing this man to be big and grasping for something on his hip. Gun, probably.

Very well—without pause, Nigel lifted with his arms. The man was trying to turn but momentum was inarguable. The body came off the floor and chunked into the window sill.

He was heavy and solid but his mass turned on the hinge of the window sill. Nigel lost his grip on the man then and a fist hit him full in the mouth. He staggered back. Taste of blood. A second fist clipped him. The man was still on the window lip. A short *ah* as the flailing shadow realized that the window had been thoughtfully left open.

Nigel lunged forward. The man was quick and hit him hard in the throat. All Nigel had was kinetics working for him. He did not let the

punch stop him and crashed into the man. He clutched the window sill to stop himself.

The other could not. Toppling: over and out.

Wilco, Roger, over and out. You never forgot the slang of youth. The body seemed to shrink in the gloom, diminishing as it tumbled. A thin scream came back, echoing on the sheet metal.

A wet smack. Then nothing. In the cinder-red glow from the city curving to the horizon he saw shadows scurry away below.

The backup team? Well, they seemed to have lost interest.

He heard a scramble behind him as Ito slammed shut the door. Anyone who tried next would find a family armed with odd blunt instruments.

He sighed. Satisfying. The view from here must be wonderful when there was enough light to see it. He had never been off the work gang when the timestone bristled with light, flooding the city with a torrent of heat and light. But then in reasonable light he would have never been able to play an old man's trick. There were compensations. He felt the damp heat glow of the ruddy timestone on his cheeks and felt no remorse whatever. Maybe this was maturity. Odd, how much like callousness it would seem from the outside. Made one wonder about assessments of others.

He thought about that, listening for noises in the inky lands below. No conclusions. There seldom were. Maybe that was maturity, too.

On the way to their audience with the Chairwoman they glimpsed zones of the city. A temple housing a single hair from the beard of some prophet whose very name was lost. Meat grilled in the open with dust-and-flies marinade. A church made entirely of cloth. One of the side effects of religious sites, Nikka remarked, was that some were so ludicrous that the whole lot fell into disrepute by association. Tonogan, who escorted them, seemed affronted that they regarded such buildings as mere examples of eccentric architecture. Nigel remembered his mother's similar reaction to his opinions on the ideas behind the Church of England.

The Chairwoman was even less pleased. "I could look into the body found in your shaft, you know."

"Yes, I wish you would," Nigel answered. "He screamed dreadfully. Woke up the neighbors. Anyone you knew?"

"I would hardly—"

"My son found some gear he apparently had." Nigel held up a chunky instrument of enigmatic tiny black boxes.

"I see not—"

"Makes you wonder what it's used for, doesn't it?"

In the peculiar custom of this place, their killing an agent of the Chairwoman afforded them some protection. People who mentioned the subject at all seemed to regard it as more like an audacious chess move than an act of violence, commending applause rather than revenge. Every era has its oddities, but Nikka had pointed out that a constant of

urban populations was the glamorizing of marginally criminal acts. This bit of theory had made Nigel bold enough to taunt Tonogan when she had come to call. Their ploy had been naughty, but somehow admirable.

The large purple woman settled on her divan and regarded them all disdainfully "I will make you a reasonable offer on your property."

Nikka said. "We only need enough to take us away from here. We want to keep our buildings."

"Why? You can not afford to return to your Lane."

Ito said flatly, "We want the buildings. That's final." The family had decided on that and Nigel was pleased to see Ito showing that they could not be split, as Tonogan had tried.

Nikka said, more to the point, "If we can't buy a short transit, how about a long one?"

The Chairwoman's face, which was usually animated despite looking for most purposes like a wad of dough with raisins stuck in for eyes, became blank. "How did you . . . ?"

"Old folks aren't entirely useless," Nikka said brightly. "I nosed around."

"Carnivorous curiosity," Nigel added. "She turned up the fact that the energy density in a wormhole is higher if it's tightly curved."

Nikka nodded. "And the cost of making a transit goes up with the energy density."

"Umm." The Chairwoman's mouth turned crabby. "I did not think you would work that out."

"Offer us terms. We want—" Nikka rattled off a long list, headed by the use of a Causality Engine—polarized, of course.

"You realize that you'll have to make several jumps, further and further into Esty-cords? And then several back?" The Chairwoman seemed genuinely interested, not merely angling for advantage.

"We'll need pressure skins, too," Nikka confirmed.

A curt nod. "You truly wish to risk that?"

"We must," Angelina said. "We want to go *home*."

The Chairwoman eyed them. "You are more courageous than you look, you Walmsleys."

She agreed to the financial details with a suddenness and phony casualness that masked a disagreeable defeat. Not that the Walmsleys had made any appreciable dent in her bureaucrat's world, he was sure. They would not have survived that. Sometimes, Nigel thought, it was of more use to be an irritant—so long as you didn't get slapped like a pesky insect.

Deal done, the Chairwoman was cordial. In a mannered fashion, apparently part of a set ritual marking successful negotiations, she arranged herself in a helical hammock—apparently a sign of informality here—and remarked, "No one ever choosed this before."

Nigel asked, "Why? We aren't particularly brilliant. It's obvious."

"Obvious, yes. But untried. Dangerous."

Nikka looked wary. "Going further in cords is how much more dangerous?"

"We of this city and Lane know more than you." She sniffed. "We have seen the bodies."

Of course they asked what *the bodies* were. Officials grimaced but did as the Chairwoman said, and within a day they were ushered into a cool, starkly lit vault.

The family had looked at each other with dismay when they realized that here, corpses from the Esty were held as volumes in a kind of library. Many times the family had debated and regretted their handling of the woman's corpse, which had precipitated their exile. Here the rare emergence of a carcass from the Esty was greeted with anticipation and also a sort of dread, for invariably the cadavers proved to come from the future of the Esty.

Nigel's elation at their negotiation trickled away as he looked at the pale, emaciated corpse of a middle-aged man, kept suspended somehow. A mass of tiny magnetic readers crowned the head. They could "read him" quite well, a technician told them. "Isotope analysis shows he's from one point three million years."

"What did he die of?" asked Nikka, ever the tech type.

"Radiation burns."

"Any memories?"

The young man blinked owlishly. "Some. Missing the short-term recall, of course."

Memories, indeed. Fractured pictures. The same hazy sky, mapped in the 0.511 million electron volt line. Only far more developed, with ornate structures corkscrewing across a mottled ruby sky.

More: a bleak landscape marked off by boxy monuments. Among these crawled three-wheeled things which appeared to be not vehicles but living creatures.

"Or mechs," Nigel said crisply.

"Who was he?" Nikka asked pensively.

"We can not really understand that. He does not have the personality signatures we know. All I can unscramble be images. What these pictures mean, we can say not."

"Why not?"

"He haved different cerebral organization. Internal organs be altered, too. He be another species."

Angelina was shocked. "He looks like us!"

The pale young man shrugged. "Tinker with the insides all you want, but keep the outside looking the same. Otherwise, people be nervous."

"That's why you can't get much from their minds?" Angelina pressed him.

"That, and cultural differences. This fellow didn't look at the world the way we do. It shows up in how he stored memories."

Nigel found all this depressing. More bodies, but still no one, not even pale pedants, understood why.

When they went to sign off on the arrangements, the Chairwoman herself appeared. "You're going into mech-dominated territory, you know," she said severely.

Nigel guessed that she was having second thoughts about the deal. Or maybe her ego was getting in the way again. Not uncommon, he thought wanly. "You're sure?"

"We receive no dead mechs coming back through the Esty Vors. Only humans."

"You're sure?" Nikka asked pointedly.

"We pay close attention. The Old Ones make sure of that." She snorted with frustration.

"Why?" Nigel persisted.

"The old questions. You haved them even in your time, um?" A speculative look, then she recited as if from memory. "First, they want to know what the mechs want up there in the far future. Plenty of mechs goed into the future one-way, using Vors."

"To carry information forward?" Nikka asked.

"Possibly. The Old Ones want to find out why."

"And stop it?" Nigel asked.

"I suppose. Or at least understand."

Nikka nodded. "So do we."

The Chairwoman plainly could see no percentage in such foolhardiness. "Why? The Esty's trouble enough if you just sit still in it."

"Carnivorous curiosity," Nigel said.

She snorted. "A child's reasoning. If you could see the things I do just to keep us tipped up—"

"Yes?" Angelina asked. Nigel was happy to see her speak up, for she had been cowed by this place. "Why *do* you tilt your city?"

The Chairwoman said scornfully, "Why, it's *beautiful*. Only a barbarian would even think of asking."

5. Transiting

The mercurial Chairwoman invited them to sleep on her personal estate as they arranged details for their Esty transit. This proved to be the same ornate, almost satirically Baroque villa where they had met her. They had entered by the back door, amid thronged streets; the true entrance gave onto a cantilevered view of the cupped city, from the uppermost rim of it.

Large birds, some with shiny teeth and even lips, hung on the winds off the Chairwoman's balcony. One swooped near and eyed them, as if sizing up a meal. It was half the size of a man. Here gravity eased, lending everything an airy lightness that reminded Nigel of getting drunk but suffering no consequences. Still, the toothy birds smiled at them with unnerving assurance. They went back inside.

The next waning lasted quite long. Somehow the city could influence

the pulses of brilliant glow emitted by the timestone, shaping them to a roughly regular schedule: dark about a third of the time, enough to sleep if you were not too tired.

Nobody here seemed to get tired. Noisy, chaotically colorful, they rushed about a lot. Nikka wondered aloud if this was just their Old Fart bewilderment at the pointless energy of the young. Nigel shook his head. He had harbored that notion for so long that he had passed through to another state, in which he ceased grasping for the fullness of life and let it come to him instead. It had taken him centuries to realize that joy and pain were equally biting and rewarded close inspection equally little. They were just *there*, like flowers. Better taken for their flavors than their metaphors.

They stood again on the balcony with the Chairwoman, idle talk before bed, and across the distant porcelain sky shot something large and swift and somber. The Chairwoman's eyes widened. "Grey Mech!" she cried, and crashed to the marble floor.

Thin cries of panic from all across the cupped city below. Nigel studied the dusky, hovering presence with abstract interest, hands on a gleaming brass railing.

"Get *down*!" Nikka called to him from her knees, hidden from view. The Grey Mech rushed toward them, accelerating from high up. A chorus of despairing shouts came up to him from the expanse of streets and glassy buildings below. Casually he turned and walked inside.

"Probably wasn't after us," he said to Nikka as they stood in an elaborate ballroom. People rushed through, panicked, calling hoarsely to each other.

"We can't be sure," she said nervously.

"Come now. We aren't remotely important to—"

The crash blew in the far wall. Hammer-hard impact, then an eerie silence.

It buried them under heavy furniture. They learned later, as a medical type patched them up, that a section of the Grey Mech had detached and gone prowling over the city. Fire lanced up from weapons below. It deflected these with dismissive ease. It had sent interrogating bursts of the electromagnetic energy into every possible device, quickly sectioning the city's grid, narrowing its search. The scrutiny sharpened upon this district but no further. Apparently it could not resolve whatever it sought. So the angular thing had fired pulses into the area, killing several hundred people and caving in the lower walls of the Chairwoman's villa.

Nigel nodded. "You were right," he said mildly to Nikka. "But why?"

The Chairwoman had suffered some bruises but that did not explain her jittery anxiety, hands clenching and unclenching, face bluish white. "Never did one attack us before. They be of the highest mech class, always ahead of our technology."

"I see not much has changed," Nikka said. "It was the same in our era."

"They could slaughter us all." The Chairwoman eyed them warily. "And they be after you?"

"A mere hypothesis," Nigel said, yawning.

Nikka caught his glance and said, "I'm still not happy with the provisions you've supplied."

"What?" The Chairwoman scowled, then said automatically, "We made a deal."

"We won't leave without—" and Nikka rattled off a further list.

The large woman opened her mouth and slowly closed it. "You *must* leave."

"No we don't," Nigel said.

She glowered. He could see her step through the logic. If these Walmseys were of interest to a Grey Mech, best be rid of them and count yourself lucky. "All right, the provisions—but you go at first light."

Nikka nodded. Anything that drew the Grey Mech was bad for business.

"Still," Nigel said distantly, later, "why should we be important?"

"Maybe because of where we're headed?" Nikka asked.

That night he lay on a sort of pliant water pillow with Nikka and they watched the snakelike dog come into their room and investigate them. It was apparently fairly intelligent and in fact head of security there. To questions it gave a nod of the head and abrupt, slurred *yhas* or *noah*.

He ignored it after a while and realized, staring out at the encased night of this Lane, that he had become married to a flat, unremarked fatality which did not carry with it any of the usual gloom that it had in earlier times. Maybe this was new wisdom or maybe fatigue but in any case he did not want to piss his life away on nonsense. Much of what he had once believed and felt he now saw as foolishness or at least useless. On the other hand, some moments shone like jewels.

He shook off this mood by immersing himself in Nikka, the love between them now so distant from belabored technical strenuities that he found it yielding up what seemed most impossible of all, moments of pleasurable surprise. He slept soundly. In the musty morning half-light they awoke lingeringly together.

"That dog was in the room when we were going at it."

"I didn't mind. Perhaps by now they've evolved to the point where at the crucial moment they politely look away."

"Moment? You think it lasted only a moment?"

"Well, let's say it was timeless."

"That's better. I do seem to recall the dog barking at an important point."

"Oh? I thought that was you."

The Causality Polarizer was mammoth. Its compressive antennas yawned like vast bored mouths, perpetually open. They gaped in all six faces of an enormous, burnished ceramic cube. They reminded Nikka of

speakers from a giant's stereo set, she remarked. These were the ten kiloHertz oscillators, delivering a teraWatt in short-wavelength gravitational waves.

Still, Nigel liked the speaker analogy—because that was how it felt. The family sheltered in a metallic capsule set beside their house, back among the familiar setting that had been wrenched away from their home Lane. It felt good to simply be there, but from the moment he got into the capsule he fidgeted uneasily. The countdown did not help.

"The point of making a wormhole sprout out of a Lane is that you really can't do it by yourself," Nikka told him. "Takes astronomically too much energy, or more accurately, density of energy. The best we can do is ripple the Esty surface, find a weak spot—a place where the Casimir force is substantial."

"Who was Casimir?" Angelina asked.

"Who cares? He saw that in a true vacuum, there would be a force, one you could harness."

"As we are about to?" Angelina looked skeptical.

"Of course." Nikka had on her *See?—obvious!* expression.

"So when we have to travel in a big loop to get home, that means we have to go into the future?" Nigel liked scientific ideas but he did not like having to think like a pretzel.

"There is a lot more future than past. The universe is only fifteen billion years old. The future's almost infinite."

Nikka seemed to think that finished off the idea. Nigel ventured, "Approximately infinite. Interesting concept. So there's a much greater chance that any leg of our trip will go into the future?" and she rewarded him again with her daintily amused *See?—obvious!* smile.

Ito scowled in the last moments before Transit and asked warily, "How dangerous is this?"

She shrugged. She was no stranger to trauma and death and did not think much about it. "Not very, unless we hit a stutter."

"What's that me—" was all Ito had time for before the pulverizing wall of sound struck their capsule.

The vibrations confirmed his fears. They seemed to go on for a sluggish, pounding eternity, though Nikka later told them off-hand that it had only been forty-five seconds. Of agony.

Shaken, they popped open the capsule lock. They found themselves among their home and out buildings, with the same slice of orchard as before—all resting atop a sliding mass of luminous timestone. To all sides a box canyon rose, shrouded in lemon-hot vapor.

They got out and breathed cold, thin air but kept their pressure skins on anyway. Nikka calculated from the capsule's instruments and decided that they had squeezed through the momentarily pulsating wormhole, traversing an Esty-displacement of several million kilometer-years.

"Could be millions of clicks away and at exactly the same time we left," she said calmly, "or the same Lane, millions of years in the future."

Wormholes tunneled between eras not at all like elevators linking floors of a building, but that was how Nigel persisted in thinking of them.

The ground shook. The plate of their property shifted uneasily on the timestone beneath.

"There's no way to tell which?" Benjamin asked apprehensively.

"The Causality Engine had chaos built into it," Nikka answered, holding onto a capsule strut for support. "We can't measure any better than this."

Nigel watched the distant sky, where more lavalike walls fumed and roiled. "How long do we stay here?"

"That's chaotic, too," Nikka said. "But short. Looks to be maybe an hour or two. We'll have some warning of when the next Transit is coming."

Angelina laughed, which startled the others. "Until then we're free to enjoy the scenery?" Despite their gathering unease, the family chuckled with her.

As if in answer, nearby cliffs oozed sulphurous light, complaining with slow groans. A sheet peeled off—*crack!*—and a sharp snap in the air knocked them flat. Here the Esty was like skin, sloughing away layers so that more could grow. Compressed events evolved, brimmed, died.

Nigel knew from undergraduate days that mass curved space-time, but the inverse was still a surprise: compacted Esty behaved like matter. Rendered as mass, events themselves were squeezed into slabs. Their endings brought forth explosive energies: literally, the end of history, for in these detonations data burst into phosphorescent energy, its true equivalent. The Esty confirmed the final triumvirate of physics, one side of which Einstein had got right: mass was like energy was like information.

They went into their house, which had been fully provisioned by the Chairwoman's minions, and tried to act as though this was a kind of homecoming. They were hungry and ate something like steaks of beef to celebrate but the coming Transit made their talk edgy. Nigel went outside. Ostensibly it was to smoke one of his cigars, carefully kept chilled in the kitchen but scorned if lit inside. He did not like delivering his family into the hands of Causality Engines or "intrinsic chaos" or any other collection of jawbreaker words which in the end meant the world's casual indifference to human life and values. But he had no choice.

"It can't be helped. You know that," Nikka said. She had slipped beside him, her footsteps covered by the hollow crashing of timestone far up on the hazy curve of this spherical Lane.

"Should've let that body rot, moved away," he said morosely.

"We wouldn't be us, then."

"Is that so bad? Change your dance steps, learn a new tune."

"We're doing what we've always wanted to do. Looking long, you used to call it."

"Quite." He sighed. "I always wanted to see over the far horizon. This—"

"Time is an horizon, too."

Stochastic. Not a word he liked, too pedantic, when all it meant was chaos, disorder, the fitful randomness of life and Esty. Their gravitationally transduced energy propelled their wedge of local Esty through the worm in jolting, stochastic motions. Transit; wait. Transit; wait.

They never knew precisely how long they would stay at any of the pauses along this worm-vortex. They could watch the surroundings, but feared to venture out. They ate up their provisions this way as their frustration built.

No map of the Esty was possible. Its contorted geometry roiled with fitful energies, a rubbery, sliding turmoil. Lanes were often long, snaky, bulging into spheres and lopsided bubbles without warning, stretching to expose fresh, wrenched topographies of timestone. Sometimes their pause-points were in the same Lane, so they watched its speeded-up evolution. As timestone evolved by its own kinetics, topsoil tumbled and spilled in great alluvial fans. Beaten beneath hammering rains which accompanied the changes, the soil molded into new hills and valleys below the craggy peaks of freshly emerging timestone. Life was resilient, adapting. In bright canyons trees tunneled up from recent burials, and most plants could survive a temporary churning to emerge into the stone's own waxing radiance again.

Nigel got grim-faced when Ito and Benjamin wanted to explore the nearby Lanes they intersected. "No."

"Why not?"

"Ask your mother. She'll tell you that it's 'stochastic.'"

"So?"

"We're not desperate enough yet."

But they were running short of food and Ito was restless, Nigel saw, beyond his endurance. After a full-scale family argument over the big polished dining room table they decided to let both Ito and Benjamin forage. Nikka, Angelina, and Nigel spent an anxious time awaiting their return as the timer on the capsule ticked down to the next Transit. With only an hour to spare, and Nikka muttering that the uncertainty in such calculations was more than two hours, easy, they came across the rugged timestone at a trot, backpacking food. Benjamin said they had seen nothing much but, as Nigel had guessed, Ito had reveled in it.

They voyaged on, Transiting and pausing and watching the long slow epic of organic life forms and mechs in the lands beyond. Usually they were isolated on a timestone terrain. Sometimes battles raged in the distance and they anxiously watched for the unknown combatants, hoping to be ignored. Usually they were, but several times mechs had cruised overhead and twice Ito and Benjamin had knocked them down with glee, using projection weapons the Chairwoman had sold them. Probably they were lucky, having the advantage of surprise in this era, but Nigel made them stop it because luck did not last forever.

They got into worse trouble at the next pause. Here a passing woman

told them that the mechs had launched a new plague, wind-borne and virulent. Better than nine out of ten in her city had died. The Walmsleys gave her food and she went on and that night they came down with it, too. Fever, violent dysentery, sinuses clotted with yellow spongy growths. Ito had walking dreams, seeing the gates of a private hell and wanting to run through them to some glimpsed reward. Nigel and Angelina grabbed him and held him down for hours before the delusions passed in a fit of sweating babble that spilled from Ito's mouth like a river of hallucination, so wild that Nikka—a part of her always dispassionate, even with her own children—wrote some of it down.

The delusions struck Nigel next and unloosened in him the many haunted memories that accompany anyone who chooses to live long.

—Cramped spacecraft maneuvering near Earth's crisp white moon.

—Swimming darkly through the icy waters of a moon, into an interior ocean filmed with kilometers of ancient ice.

—Winds blowing acid dust in his face and aliens like huge radio antennas lumbering toward him in the frying heat.

—Their aching long flight to reach the Esty, in search of refuge from a galaxy that seemed filled to overspilling with mechs.

He spoke of these, sputtering in the warm spray of dislocated words, and could not recognize his own foot sticking naked at the other end of the bed, or the blood he coughed up, or even the perpetual frown that furrowed Nikka's face in the dim night.

The only factor which saved them was their simple distance in Esty-coordinates, he realized later. The mech-made virus was so tuned to the humans of this place-period that it missed them by a hair. So they merely groaned and sweated and fouled themselves, the disease taking a full week to work its way through each. They carried it through three pauses and were out of food again by the time they could all walk without shaky knees.

Evidence of mech-wrought damage lay everywhere. Charred cities, blasted landscapes, bedraggled populations torn by raids.

Once, while they were foraging for information and food, a mech caught Nigel and Angelina in the open. It was crawler type and burned Angelina pretty badly before Nigel could knock out its mainmind. When he saw how much Angelina was suffering he put her to sleep with a sedative and while waiting for it to take full effect in a rage he pulled off the mech's working arm and used it to bash in the carapace, letting himself go completely to the sheer boiling energy of it. Then he carried Angelina across his back, barely reaching their farm buildings before he collapsed. He was sobered for days afterward as he watched her recover, fevered sweat glazing her eyes.

Seen through the prism of the Esty, Nigel thought as he tended his daughter, life was like a long march, an endless column of forlorn souls moving forward through surrounding dark. Locked into their own eras, nobody knew where they were going. Still, in every society they

glimpsed, there was plenty of talk and the fools pretended to understand more than they were saying. There was merry laughter, too, and somebody was always passing a bottle around.

But now and then somebody stumbled, didn't catch himself right, lurched aside and was gone, left behind. The dead.

Sliding timewise forward, sometimes backward, poking their heads out where the chaotics of the harnessed worm commanded, Nigel saw the long mortal march in snatches, which made it all the more telling.

Whole societies eventually joined the individual dead. For them the march stopped at that moment. Maybe some had a while longer, lying back there on the hard ground, already wreathed in fog—time to watch the parade dwindle away, carrying on its lights and music and raucous jokes.

For us the dropouts are back there somewhere, he thought, fixed in a murky landscape we're already forgetting.

He could recall others who had stayed behind, years ago. With a little sigh or a grunt of agony or just a flickering of fevered eyelids, they left the human march. No longer did they know the latest jokes or the savor of a fresh bottle of wine, or what the hottest rumors were about. The march saddened him. He remembered friends long lost, wished he could tell them what was up nowadays, share a laugh or a lie.

As he read his latest indices, now covertly so that Nikka did not see, he thought, *Right—and the point, you brooding old bulk, is that you know your station above the tide of time is temporary. That persistence is your only virtue beyond theirs, and it is artificial. That someday you would catch an ankle and go down and the murk would swallow you, too. Maybe it would be better if you didn't have that puzzled, startled moment of staring at the retreating heads, the faces already turning away from you. Maybe it was best if you couldn't hear that last parting round of hollow laughter from a joke you would never know, the golden lantern light already shining on them and not on you.*

And it will happen to everyone you have known or ever will.

Somehow he never got used to that.

They could flee in space-time, but biology followed. They all had a relapse of the mech-made plague, far milder but bad enough.

Ito recovered first. When he simply announced that he was going out for provisions, in the pause they had just come to, no one could mount more than feeble resistance. The next Transit was days away, the probability indices said.

"Probably! Only probably!" his mother protested weakly.

"There's no 'probably' about our starving, though," Ito said grimly. So he left.

The time passed in fever and worry. But they all were better by the time Ito returned, loaded down and with a bad leg wound.

To Nigel the sight of his oldest coming through their front door was like the sun coming out after a night that had lain on them all like a

sullen lid. As he helped Ito store the vegetables and fruit, he felt a difference in his son. Dinner that evening drove the difference home. Ito spoke more directly, clearly, face free of the stretched tensions Nigel remembered from late adolescence.

Like many men and women compelled to action by restlessness of body and spirit, Ito had no interest in the notion of adventure. But he knew storytelling well enough to see what people saw in it and so recounted with accurate detail incidents which seemed ordinary to him, arising out of necessity: the mech like a snake which attached itself to his leg and could not be dislodged, he found while bellowing in frustrated rage, except by finally singing to it; towns built aslant and of both surpassing beauty and ugliness; aliens galore, who treated him with utter indifference, while he found them fascinating; the beheading of a woman for unspeakable acts she had performed with a mech, which was both horrifying and puzzling, for no one could explain the mech's motivation, while the woman's seemed to lie within the known range of human perversions; a mech religion which worshiped exclusively animals, attributing to them a natural wisdom; a castle of glass through which the passerby could see the inhabitants living out their lives under constant scrutiny, never concealing even the most private acts; a waterfall that rose upward and formed ice at its summit, building a glinting blue-white mountain.

Nigel realized as they went to bed that his son had made a transit of his own, one that few speak of and most do not recognize until years after.

6. Inflection Point

On they voyaged, slipping through sheets of Esty, tugged by the energy flux of the worm. Nikka rigged an optical sensor on their capsule's outside and they saw, slowed enormously, the instant of transfer. A filmy sheen formed around their form, contours rippling.

Though in their simple picture a wormhole was like a tube passing between floors of a building, the floors different spacetimes—a glinting needle piercing ebony Esty cloth—the worm was in fact three-dimensional in their frame.

At the shaved second when they passed through, the worm was a flickering spherical glaze. It swelled, swallowed them, then dwindled away to a point—which vanished with a spray of golden brilliance and stomach-turning torques. To Nigel it felt as if he were climbing up his own chilly vertebrae.

They watched the Esty beyond their small area, sometimes for mere minutes before it changed again. Scenes and lands flickered beyond their small preserve. They witnessed eras with no visible human presence, others with jammed cities teetering on shaky timestone, still more with no atmosphere—so their pressure skins *snicked* shut immediately when

they emerged—and others with virulent, acrid gases for air. Some pauses were long enough to venture forth.

Through all this Nigel and Nikka reached a new equilibrium, a sweet sad realization spawned from the vistas of time they had traversed. There were myriad incidents, some small and telling while others were large and dangerous and finally meaningless, and they all pointed toward the heartache and matching joy of humanity itself. They met, in glancing fashion, teeming tribes, rich in spirit and intellect. Soldiers, who drank with gusto and ate with undisguised zest, though they knew they would face battles on the morrow which would probably decimate their ranks. Scholars, bent by their pilgrimages and ravaged by poverty, yet still warm with the satisfactions of the studies to which they had devoted their lives. Children, playing among the blackened ruins of their homes. Parents, rejoicing in their infants even as calamity closed in around them. In cities growing stranger still as they Transited further, people sang slow, sad songs in the streets even as mech forces gathered high in the Lane above, and crowds collected to see magicians perform tricks and make ancient jokes, all greeted with raucous laughter. Among the few dazed survivors of other assaults, on other twisted landscapes, the Walmsleys met stoic survivors who nonetheless found fresh loves, new friends, and began again. Generations melted away and others came forth, with only a few managing to hang onto time for as long as Nikka and Nigel had, and through it all somehow a frail, brave, human light always streaked the surrounding shadows.

The old *non sequitur*, that species became degenerate as they went on, found no evidence here. Humanity bristled with activity. Societies rose and fell with stubborn indifference to earlier failures.

In the face of the inevitable end, and the inevitable questions, Nigel reflected, none is exempt: witness Jesus' wail of despair as he edged rather tentatively into eternity. He did not know what to make of such dogged human persistence. Nikka was less puzzled, and beamed with pride in her own kind.

They came to the far end of the curved worm's path through the Esty. Nikka declared from the data, "We've gotten damped into a stutter."

"Which is?" Nigel stepped out into the local familiarity of their farm. Beyond, the lands were strangely shadowed.

"We're hung up, basically. The vortex worm turns here—" she smiled at the small joke, much needed as the family grasped her point—"and begins an opposite curvature in the Esty. We'll be going back from here on."

"Going home!" Angelina cried happily, clapping her hands.

"But?" Nigel was pensive.

Nikka gave him a rueful nod. "But . . . we're stalled here, at the inflection point. We're retracing the same interval of time over and over."

"Stuttering in space-time." Nigel rolled the idea around in his mind.

They walked to the edge of their land. In what seemed like the solid

mass beyond Nigel saw pale blades and soft blue shadows, as if deep somewhere a sun were setting. Radiant blades danced as if refracted beneath a lake's wind-blown skin, like summer's liveliness probing into a deep watery cavern. And as he watched, the whole thing repeated. And repeated.

It was unsettling and he nearly lost his footing, the way a man approaching a sheer drop goes weak in the legs even though still on solid ground. A mere crust kept him from an abyss.

"We're cycling through the same moment," Ito whispered. "Over and over."

"Damn!" Benjamin was not awed. He just wanted to go home.

Then the scene jolted. Hills rose, bristling with raw rock. In jumpy, flashing images they watched the slopes weather, ruts cutting in. Peaks wore to knobs, hills slumped—and strange spires rose, icy blue. Glaciers of eerie green slid through valleys. Nigel realized they were not glaciers at all but some immensely cold superfluid, in the terminal death of the farthest future. They were seeing the slices of time into which information still could be packed, wedges of instants harvested from an immense span of time. They could fathom the sliding immensities that wrecked mountains and oozed into nothingness, for they were witnessing physics and dynamics beyond the hinge of human time.

Then, abruptly, they were back to the same endlessly cycling moment they had seen before. Somehow they had leaped far beyond, then back. They watched the repeating interval for a while but nothing more happened.

"Mom . . . how do we get out of a stutter?" Angelina asked quietly.

"We don't do anything." Nikka stared at the timestone which coiled incessantly like a pile of glowing snakes. "We wait it out."

"How long?" Benjamin looked at the seethe, distaste curling his lip.

Nigel wondered disagreeably whether the question meant anything, if time cycled outside. And space, too—he could see the same shards rise and descend, rise and descend. But their little wedge of Esty ran on its own time axis. Or so he thought. How would he know? His head began to hurt.

Nikka said, "I'm afraid that is a stochastic variable, irreducible."

Nigel erupted, "*Everything's* chaotic here!"

Nikka smiled. "Except you. You're perfectly predictable."

That made them all laugh, but it did not seem so funny after several days of edgy waiting.

Then events beyond shifted.

The air turned cold with a sudden ferocity no planetary environment could ever match. And without any visible cause, the land began to evolve beyond their encapsulated chunk of farm.

"Is the stutter over?" Angelina cried, excited.

"I don't know," Nikka frowned, deepening the crows' feet of lines around her eyes. "Time seems to be accelerating outside."

"We're holding fixed in space, sliding in time?" Ito asked.

"Looks to be," Nikka said. Physics here seemed to Nigel to be largely a matter of opinion.

The sliding, coiling timestone was churning as before when a waning came, and the next waxing there were valleys, soil, plant life. The land here was cut and worked by unknowable forces and yet the weather also had ordinary touches: sudden showers, the drifting smell of sage, meat curing somewhere in a distant smokehouse.

The runoff storm waters sorted themselves out into streams and then slow-moving rivers lined with tuft-topped trees. The soil beside them sometimes shot up into a mottled sky. Jagged crests shaped as they watched, spikes raking cottony clouds.

Cautiously they hiked out into the new land. Oddly shaped creatures scampered among the rocks, dancing on webbed feet as though the ground were too hot to bear. The family went down a long grade and could see what looked like log houses at the feet of steep hills, windows glowing orange, dusky smoke blown so hard from their stone chimneys that it flattened along the roofs and trailed like flags down the valley. Through a cut in these hills they came into a dark bowl and a city spilled out like a shower of cinders stirred from an unseen fire, pinpoints going on as the light from the Esty ebbed. But no people. Nigel realized that it was moving, the entire construction somehow crawling toward them. A city-thing, alive.

He wondered what it could contain. Was there anything more to surprise a burnt-out wreck like him? A place which could startle him and yet let him sleep peacefully?

Though of course, he thought, nodding ruefully, he would still wake in the morning with the old familiar gargoyle of fears sitting on his chest, peering into his face, grinning toothless and triumphant.

Abruptly timestone jutted through the topsoil. It split and burned, jagged teeth raking the land. They ran back to their own area, barely making it.

The Grey Mech appeared shortly afterward.

7. Far Futures

Lying in a crevice of timestone later, Nigel recalled a time long ago when contact had been possible between humanity and the bewildering zoo of mech constructs. He had bound up his broken left arm and waited for sleep to take him. He fixed upon the past because thoughts of where his family might be would do him no good. When he could walk again he would go look. That was all.

Some mechs back then had convinced members of Nigel's own crew that existence as a mechanical creature was both better and longer lasting than the fragile life of "organic" creatures. So quite willingly some lower forms of the Grey Mech had "incorporated"—their term—several friends of his. "Uplifting," they termed it.

The process was painless. As mechs his friends became contrived boxes mounted on skeletal frames. They moved about the landscape seldom and when Nigel had tried to talk to them about their lives they seemed distracted—as if carrying on a telephone conversation while watching something more interesting on television, he thought. What they did say was bland, empty, and yet somehow chilling.

He had waited some years until he was again in the particular Lane where this had happened. He settled in behind some rocks at a goodly distance from where he knew the Grey Mech's lower forms sometimes came. The ones who had uplifted his friends.

Their sensors were good and he could not get too close. One of the under-forms appeared and he was sure of its identity by its electromagnetics, its spectral hiss and clang. He shot out its undercarriage. With a weapon whose physics he did not quite understand he put three holes through the main frame of it. The mech went silent, its electromagnetic buzzings winking off. Something small climbed out of it and tried to get away and Nigel shot it eight times with great satisfaction. He later learned that the other under-forms had been incorporated back into the Grey Mech so he had to be content with the one.

Of this he dreamed, as his arm ached and his heart burned leaden in his chest.

It rained hard in the sullen dark. Vegetation beat at itself in the lashing winds. Lightning leapt across the sky. He could see the forks of yellow and green snaking high above where the Esty folded over onto itself in a blithely twisted geometry.

No sign of the Grey Mech.

No, Grey Mechs, he corrected himself. That had been a rather large error.

Two Grey Mechs had appeared in the Lane. Ashen, blocky, each headed for the buildings. He remembered the frozen tableau: Benjamin and Nikka and himself, scrambling for the segments of the Transit device. Ito and Angelina, turned to flee.

Time was hopelessly warped here, he had conceded that long ago, but the same old question remained. Could he have done anything different?

In the few seconds before the dusky shapes reached them he shouted, "Transducers!"—meaning the big pyramid-shaped wedges which transferred stored electrical energy into gravitational pulses.

"At which?" Nikka yelled into a roaring, rising wind raised by the Grey Mechs.

His eyes jerked from one Grey Mech to the other. Nikka slapped her wrist to the console, popped the interface.

Which one? Both? Two ashen chunks with no visible means of flight. Pivoting on an unseen axis, in a sky that ripped with their passage.

Not acting together. Each responding to the other's darting swerves.

One was closer, larger, coming fast, and in desperation he chose it. "There!"

Nikka aimed and fired the transducers in one quick swivel of her interface hand. The ground buckled with the release of acoustic power and they all three sprawled. The leading Grey Mech shuddered but came on.

Ito and Angelina never reached the house. The leading Grey Mech loosed a bolt which seemed to wrap itself like a scintillating blue-white cloak around them. They twisted and fell.

Fringes of the bolt killed Nigel's in-body electronics instantly. He had struggled halfway to his feet when the queasy jolt of his systems going dead knocked him down again.

He looked up at what he expected to be his last vision. Numbly he watched the spectacle of two Grey Mechs battling each other across the sapphire sky. Spasms refracted down the streaming air. A shock wave slammed into him and he felt his body bounce from its power.

He tried to hang onto consciousness, but the chilly blackness had clasped him to itself—

—To awaken here, on a timestone slope. Arm broken, shooting pains in the legs.

No, he probably could not have done anything differently. Alas.

It was always comforting to think that but in dealing with mechs it was in fact true. They acted far more swiftly than beings based on muscle and nerves. But thinking this did him no good because it still sounded like an excuse.

He groaned and opened his eyes, the lids sticky. Lightning licked overhead, seeking a place to rest, on a quest of its own. He knew it was merely a horde of electrons seeking a path to discharge an electrostatic potential, but that did not quell the eerie sensation of watching strange spirits seek and probe and lash the air with their desire. He was watching the luminous lemony fingers play across the high roof of the Esty when she came to him again.

You've changed.

"You haven't."

My kind never does.

He blinked but it made no difference. Nikka stood a little to one side, looking out at the same slippery lightning that he was. In the sulphurous flashes he could see her classic high forehead and delicate cheekbones. Did seeing her this way mean that she was dead?

"Nikka, I loved you so, I—"

Past tense?

"Sorry. Love."

Her lips curled in a soundless laugh. *We came a long way, all for your love of the unknown. Your curiosity.*

"It's how we're both made. A flat fact of the universe."

And you?

Nigel could not read her expression. "Me?"

Are you a fact of the universe, too?

"An unimportant one, yes."

You were important then and you are now.

"I'm a cockroach on the stage at Stratford. You might say, rather a serious case of undercasting."

By who?

"By whom," he said distantly.

Ah! Always the language purist. Okay then, by whom?

"The Director, I suppose."

Who is . . . ?

"I've wondered about that. If there's something working itself out here. Somehow."

God?

"Too short a name for such a large idea. Anyway, I'd have thought you could ask Him directly, eh?"

Because I'm in heaven?

"Aren't you? Or someplace at least different?"

She laughed. *I'm in your head. Not really heaven, no.*

Yet as she turned slightly more and smiled at him, Nigel could see her with crystalline clarity. This was too good to be an hallucination. Too solid, crisp, real. He must be worse off than he thought.

"Nikka . . . ?"

Yes?

"Sometimes I get worn down by it all. I want to—I—"

Not that time yet.

He snapped, "I'm like a child, told when to go to bed?"

This isn't bed. Not nearly as much fun, for one thing.

"I'm . . . tired."

Not physically though.

"Perhaps I've seen too much."

It's not your moment yet.

With sharp anger he barked, "It isn't your moment either."

But you're afraid that's what my being here means, yes? That I'm dead.

He shook his head, unwilling to admit it.

You're still getting hard at night, just thinking of me. There's still a lot of life between us.

"Um. I can hardly deny it, can I? You seem to live inside my head."

Exactly, lover! And as long as I do, maybe I'm still here.

"So my fears are being projected outside me? That's what you are?"

We are all the loves we have known—that's my own attempt at self-definition.

"I like that. A definition free of the worn-out carcass, the body."

Don't ignore the body. Or bodies.

He paused, swollen tongue running over bitter teeth.

"Bodies . . ."

The bodies get us into this.

"Don't remind me."

Think of them as calling cards.

"How hilarious. From the Grey Mechs, no doubt. Come to the dance, please, and die."

Who would read a suredead body, lover? Think.

"I'm starting to hate riddles." His head was woozy, the world circling him in a slow waltz

I'm a part of the riddle, too. We all are. See you around, lover.

"Not yet!"

'Bye.

He weathered out the long, murky waning. His in-bodied indices had come back somewhat. They were erratic and the index he watched most carefully was down three more points. He sighed, momentarily glad Nikka was not here to worry about that, and then the weight of it all came in upon him. He lay in fever and bitter regrets, thinking thoughts that went down so deep, the lizards there had no eyes.

Something had blown him a long way down the Lane they had been in. This he discovered by climbing an unstable peak of teetering time-stone and peering above a deck of olive-colored clouds. He recognized the territory where their farm had been and determined to walk back to it. This took longer than he thought it should with the broken arm and he hurried at the end. The farm seemed deserted at first. Inside the house he sat at the long dining room table and the room seemed filled with ghosts as substantial as Nikka had been and that was when the thing moved into view.

He sat completely still. It was two-legged and had arms and that was where the resemblance ended.

Human? Eerie, silent, radiating strangeness like a chill wave.

He noticed that his in-bodied electronics were working again. They helped a little with the splintered arm. The thing moved slightly. His in-bodys fluoresced in a disturbing response, sending dazzling fireworks across his retinas, and then he got it all in one long burst:

He stood beneath a dull black sky framed by a jagged horizon. Abruptly, he *knew* in a way he never had. In his weary bones he *felt* a worldview—kinesthetic, perceptions as momenta and geometry, not words. He fumbled to put the sensations into terms that he could get his mind around.

The sky. Black, then unfolding into streamers of feathery light.

How different, he thought, from the physics he had learned as a boy. In the Newtonian views of Boltzmann and Clausius, the universe extended forever but was always threatened by collapse. Nothing countered the drawing-in of gravity.

Given enough time, matter would seek its own kind, smacking into greater and greater stars. But the stars would die, guttering out as blunt thermodynamics commanded, always seeking maximum disorder. The Second Law of Thermodynamics ruled.

He folded his arms, tried to make sense of the buzzing images. So. Then.

That old, firm universe was doomed. In time, even hell would freeze over. Stars would burn into shadowy cinders. Planets, their atmospheres frozen out into waveless lakes of oxygen, would glide in meaningless orbits, warmed by no ruby star glow. The universal clock would run down to the last tick of time.

Only after he had left Earth, and had time to study subjects that he had neglected in school, did he see what the twentieth century—the oft-disparaged “Twencen” of later slang—had done to that dark, earlier vision.

The universe was no static lattice of stars. It grew. The Big Bang was better termed the Enormous Emergence, space-time snapping into existence intact and whole, of a piece. With space-time came its warping by matter, each wedded to the other until time eternal.

For its first hundred billion years, the universe would brim with light. Gas and dust still folded into fresh suns. For an equal span the stars would linger. Beside reddening suns, planetary life warming itself by the waning fires of stellar death.

When a body meets a body, coming through the sky . . . he mused to himself. Stars inevitably collided, met, merged. All the wisdom and order of planets and suns finally compressed into the marriage of many stars, plunging down the pit of gravity to become black holes. For the final fate of nearly all matter was the dark pyre of collapse.

Now he felt, like a leaden soup in his gut, the implications of what he saw above him: a gaudy swirl of leaching light.

Galaxies were as mortal as stars. In the sluggish slide of time, the spirals which had once gleamed with fresh brilliance would deaden. Black holes would blot out whole spiral arms of dim red. The holes would gnaw through the galaxies themselves.

Life based on solid matter had no choice. To gain energy it had to merge black holes themselves. Only such fusions could yield fresh energy in a slumbering universe.

High civilizations came, mounted on the carcass of matter itself, the ever-spreading legions of black holes. Only by moving such masses, extracting power through magnetic forces and the slow gyre of dissipating orbits, could life rule the dwindling resources of the ever-enlarging universe.

Oh, that this too too solid flesh would melt . . . he was startled to find that phrases learned by an irksome schoolboy in a cobwebbed past still leaped readily to mind. Old, and true.

About this vision of a swelling universe, its life force spent, hung a great melancholy.

For matter itself was doomed. Its basic building block, the proton, decayed. This took unimaginably long, but was inevitable, the executioner's sword descending with languid grace.

But something survived. Not all matter dies, as did the proton. After

the grand operas of mass and energy have played out their plots, the universal stage cleared to reveal . . . the very smallest.

The tiniest of particles—the electron and its anti particle, the positron—lived on. No process of decay could find purchase on their infinitesimal scales, lever them apart. The electron danced with its anti-twin in swarms: the lightest of all possible plasmas.

By the time these were the sole players, the stage had grown enormously. Each particle found its nearest neighbor to be a full light-year away. Communication took years . . . but in the slow thumping of the universal heart, that was nothing.

Could this actually happen? Perhaps, he thought, the best possible universe was one of constant challenge. One which made survival possible but not easy.

With an electric shock he felt the full force of it:

If life born to brute matter could find a way to incorporate itself into the electron-positron plasma, then it can last forever.

The thing was still standing at the far end of the dining room table. Cold ivory light played upon it.

Nigel looked at it and felt a mixture of joys and sorrows he could not name. He panted shallowly, breath rasping as if he had run a long distance.

The thing reminded him of a funhouse mirror distortion of a woman. Bulging here, slimmed there, suggesting deep changes which left the mottled skin the same.

Intelligence glowed in large, unreadable violet eyes. It moved with easy grace, the awkward compromise curve of the human spine replaced by a complex double-spined split in the lumbar region. Broader hips held more weight. Four arms tapered to hands, every one with differently shaped fingers.

This was what humanity had become in the billions of years since his own time. And he understood that this was not some mere adaptation to the Esty itself. It was how humanity had evolved to meet its destiny everywhere, amid the hundreds of billions of stars across the churn of the galactic disk itself.

He got up without knowing why and walked outside. Now the jagged horizon was there—the same frame he had seen in his mind.

Somehow this Lane had opened, unfolding itself like a blossoming flower. At the command of the thing in his dining room.

And above sung the technicolor gallery he had seen in the mind-memories of the dead bodies. Electron-positron plasmas, immense and intricate, hanging where the stars had once been. He was seeing into the very end of the universe, the Omega Point, hanging in a sky where logic said it could not be. But was.

He stood there trying to fathom how he could see an open sky from inside the self-folded Esty. This simple but colossal change meant that

someone—something—had mastered the Esty itself, could unwrap it like a Christmas package to find fresh delights.

He walked down into the torn and seared yard. Across a wrecked landscape came his family. Nikka. She limped. Benjamin and Angelina carried Ito's body. All there, solid, no hallucinations now.

"He's gone," Nikka said simply.

One Grey Mech's bolt had killed his son. In the same instant Angelina had suffered an in-body electronic blowout and the skin along her left side had ruptured, a thick purple bruise gone stiff and already yellowing.

On his oldest son's face was an expression of surprise and pain. Nigel reached out to the cradled body and ruffled the hair tenderly, bent and caught the familiar smell. Then he made himself stop.

"I . . . we've got to . . ." He could not make his throat work.

"The readers," Nikka said, limping past him toward the house.

The thing he had seen was not there now. The rooms felt icy.

They got Ito into the readers and did what they could to pull forth from his brain cells the essence of him. Fluids, sutures, digital artifice. The labor was long and the family scarcely spoke, concentrating fully and leached of all else but their yearning.

They sat at last on their porch and watched the feathery swaths of brilliance in the sky. He told them what he could and Nikka spoke for the first time since they had lowered Ito into the preserving solutions. "So the bodies . . ."

"Were addressed to us." Nigel nodded grimly. "Or someone like us."

Angelina supplied in a wan, empty voice, "Someone who would come."

"And we may not be the first." Nikka watched the slow churn in the sky impassively. "The Grey Mech who killed Ito would have killed others, too."

"But it did not get all of us," Nigel added. "The other Grey Mech prevented that."

Benjamin's face had been containing anger for a long time as they worked and now it came out, first in a string of oaths and then a final forlorn wail. At last, gasping, he said, "*Why?* Bodies sent back like invitations—Grey Mechs—Ito—for *what?*"

Nigel knew that there was no real answer to the despair under Benjamin's words and that the best anyone could do was to talk about the surface. So he said gravely, hands knotted before him, "The bodies attracted the attention of humans. They were like bottles with scraps of paper rolled inside, tossed out into an ocean. Only the curious, only someone who understood the human need to communicate across the impossible stretch of time, would pay any attention."

Nikka's drawn mouth moved but the rest of her face did not, eyes staring into an emptiness. "Most mechs have never respected us enough to learn how to read our brains directly. To them we're messy, archaic. So they wouldn't know how to decipher the bodies, even if they cared."

"Except the Grey Mech," Angelina added.

"Grey Mechs," Nigel insisted. "One Grey Mech opposed the other. Saved us, I expect."

They sat in silence as chill winds blew across the fitful landscape. Nigel knew they were all digesting the strange fact that there was more than one Grey Mech, acting out of concert.

"So one faction of mechs wants us to survive?" Nikka asked with sudden bitterness.

Nigel got up and walked behind the chair, began kneading her neck and shoulders. His broken arm somehow did not hurt now though he knew that he would inevitably pay for this later.

She resisted him for a moment and then relaxed into his hands. He felt the release in her. "I suppose there are Grey Mechs from different times, eras," she said. "The Grey of our time wanted to stop any humans from learning about that sky." Above, prickly streamers wreathed hard orange knots, bristling with ferment.

Angelina said wonderingly, looking up, "That's what the mechs want to do. Make themselves into those plasmas."

Nigel nodded. "So they can outlive solid matter itself."

Nikka said with caustic scorn, "Our son died because he had seen *that?*"

"In a way," Nigel said gently, his hands digging into her tense muscles. "To stop us from spreading the information. And that's why the somebody—" he thought of the strange yet human figure he had seen—"sent the bodies. To bring us here."

Angelina said, "I hate the way we have been jerked around."

Nigel nodded, his expression distant. "We aren't the superior species here. We get used, that's the order of things. I wonder if our pets sometimes feel what we're feeling now."

Nikka was inconsolable. "And all for what?"

Suddenly he recalled Nikka saying, *Who would read a suredead body, lover?*

Nigel ventured a guess, the only one left. "So *we* would go back. We understand this in a way that images or memories in a body could not. Somebody wants us to take back what we've learned."

"Who?"

"Somebody? Or something."

The second, smaller Grey Mech swelled above them in the darkness. A dusky presence.

They knew there was no use in going inside so they watched its approach. It hung in the sky, a dark blotch coasting among coalescing rivulets of light.

No bolts, no shock wave.

Their apprehension ebbed as moments slid by and it made no aggressive move. "I suppose that is the one who helped us," Nikka mused.

Nigel had the eerie impression that it was watching them just as they watched it. They all noticed a small humming, not in their ears but

throughout their bodies, as if long acoustic waves were resonating in them, deep notes below hearing.

It glided up and dwindled. Smoothly it veered toward the largest of the luminous constructions and into Nigel's mind came a single word: *Radiant*. Somehow he knew that this was a name, the way the Grey Mech thought of the electron-positron life that swarmed in this far future night.

Abruptly, the Grey Mech vanished into the brilliance. A flash, as if it had met the anti-matter and been consumed. Seconds later, the humming stopped.

They looked at each other without speaking. Had it died, task completed? Merged with its own form and fate?

The Grey Mech had shown them something, but they were not certain just what.

Their next Transit came soon. The stutter was over at last.

They were dazed and tired and simply slept through Transits as they followed the long arc of the wormhole in space-time.

They did not speak of Ito. Their preserving solutions would hold the body for a long while, but the central question was how much of Ito's self had been lost before they could record it, to save the structure in his dying brain.

Nigel sat and watched the landscapes outside while the others slept. Parents fear more than anything the loss of their children and now that he had lost at least some of Ito—for no process, he knew, could completely restore the son he had loved, as was—he could not stop remembering the moments with Ito as a little boy, the passing incidents transfigured by time into golden memories. There is no perfection in the world, but one of the functions of memory is to make the past perfect at least in its small ways. He clung to that and knew that this phase would pass, too, but he relished it nevertheless.

Days of relative time passed. They were all in a hurry to return to their era and the random pauses during Transits irritated everyone. They became short-tempered and edgy about small details. Nigel withdrew, growing silent.

Then, during a longer pause, he went for a walk with Angelina into fields beyond their sheared-off farm. It looked like maize and he hungered for something reassuring as he hiked across rumpled fields beneath a warm yellow glow of timestone overhead.

It was indeed a field of maize but at its edge was a black swarm in orderly, marching columns. He squatted in the dust to inspect. Ants. So many they called up sudden apprehension. But they ignored him and Angelina.

Here a line carried a kernel of corn each. Others carried bits of husk and there an entire team coagulated around a chunk of a cob. He followed and found that the streams split. The kernel-carriers went to a ceramic tower, climbed a ramp and let their burdens rattle down into a sunken

vault. They returned dutifully to the field. The other, thicker streams spread into rivulets which left their burdens of scrap at a series of neatly spaced anthills, dun-colored domes with regularly spaced portals.

"Wonderful," he said.

Angelina caught his meaning, nodded. "So . . . intricate."

He marveled. These had once been leaf-cutter ants, content to slice up fodder for their own tribe. They still did, pulping the unneeded cobs and stalks and husks, growing fungus on the pulp deep in their warrens. Tiny farmers in their own right. But in the long voyage through humanity's care, they had been genetically engineered to harvest and sort first.

Faithfully they paid their human masters the tribute of the rich kernels, delivered to storage, no doubt following chemical cues. He thought of robots, clanky things. More subtly, insects were tiny robots engineered by evolution. Why not just co-opt their ingrained programming, then, at the genetic level, and harvest the mechanics from a compliant Nature?

Slowly, as they wandered in nearby fields, he came to see that here the entire biosphere of the Esty had shaped with similar craft. Like old Earth, the Esty was a machine which kindled life and tuned it to the needs of . . . who? What? Intelligence?

Certainly masterful hands lay behind the Esty, something immense and unfathomable. But then, the Earth had for nearly all of human evolution been just as mysterious to the growing, still-sluggish minds that lived among its marvelously tuned valleys, thick forests and salty seas. The Esty was a step up in that chain. A place beyond the comprehension of the smart apes who had blundered into this vastness, long on awe and short on table manners.

Somehow this discovery about the Esty of the future buoyed him. Angelina felt it, too, a strangeness that was somehow familiar, part of being human in an order beyond their knowing. A silent agreement passed between father and daughter and they held hands crossing the last field.

They trotted back for the next Transit. Later, he found himself paying more attention to the panorama unfolding before them as they slipped and glided along the twisted geometry of the meandering worm.

He saw again and again recurring themes. Sailboats cutting the green waters of great, curved lakes. They dappled cupped bowls of water as they harvested the winds that blew through the Lanes, blunt pressures adjusting thermodynamic truths. Spherical houses which clung to impossible cliffs, imitating hornets' nests with Euclidean grace. Hot air balloons, inverted teardrops hanging yellow and gold and sunset red amid the cottony chaos of clouds. Only later did he notice that the coasting teardrop shapes were not managed by men at all. They were alive. Great heads swung where gondolas would. Immense eyes surveyed the land below for foraging. His surprise turned to pleasure. One teardrop plunged abruptly, snagged something on the ground, and buoyed aloft again.

In all these, form fitted so perfectly to function that the marriage

recurred in many different societies, cultural worlds divided by immeasurable difference, but united by a deep aesthetic which shaped tools to an obliging hand.

All this he learned during their forays out for provisions, during the pauses which now seemed unbearably long. The Esty had all kinds of people, he learned by bargaining with them. Maybe it had to, to work. There were ample numbers of the smoky-minded, the everyday deluded, the types who had to use emotional suction cups to hold onto this place at all. Nothing in nature said life should be easy.

8. The Cauchy Horizon

"You all realize," Nikka said to them over the lustrous dining room table, "that we can't truly get back to where we were?"

She had called a formal little family gathering after supper, no small talk or leftover coffee cups to clutter the mind. Everyone sat upright, properly chastened.

Angelina blinked, shocked. "We *can't*?"

Nikka seemed to think this should be obvious. "A wormhole head can't eat its tail."

"Ummm?" Nigel didn't follow.

"If one end of our wormhole gets too close to the other, there is a quantum-mechanical effect. Particles fry up out of the quantum foam, acting like a pressure. This forces the ends apart, so the loop can't close."

Benjamin was puzzled. "Particles? Why?"

Nikka thumbed in diagrams, which floated just below the polished tabletop. Airy confections: yellow light-cones intersecting scarlet, slanted planes.

"The wormhole head can't get close to its tail, can't get beyond what's called the Cauchy Horizon. If it does—"

Frying radiance pulsed from the blue wormhole head. An answering hot shower pulsed from its tail. A storm of colliding radiation pushed the two apart.

Nigel would once have untangled these Euclidean graces, but he was content now to let Nikka ferret out the truth—or theory, rather, he corrected himself. There was a big difference. Nikka said, "If they get too close, you could go back to where you started and stop yourself from beginning."

Benjamin shook his head. "Why would I want to do that?"

Nikka laughed, eyes crinkling with myriad lines. "Physics doesn't care about what you *want*. It's about what you could *do*. Try to create paradoxes in causality and the universe will straighten you out—pronto."

Nigel ventured, "Uh . . . how?"

Nikka gestured at intricate traceries of world-lines, slanting surfaces chopping through event-space. Nigel nodded as though he were following

all this, and in fact some of it did come through. But he was struck by how the obliging simplicities embedded in the minds of primates who learned to throw rocks and joust with sticks on the flat dry plains of Africa could so deftly eye the warp and woof of the Esty labyrinths. Presumption masquerading as physics . . . probably. Nikka's pale logics were almost persuading. Almost.

Their world peeled back to its essentials.

Beyond their compound the Esty flickered. Events, eras, whole blighted histories shimmered and winked away.

Backward, sliding backward.

The worm was writhing now, curling through its convoluted course on its great ranging return. There was no clear concept of speed in this, Nikka pointed out, because the rate of progress through time could not be measured *versus* time. The human perspective did not encompass this, and Nigel's rather classically stiff-lipped education resounded in memory: *That you cannot measure you cannot know.*

What they all did know was that the supplies for preserving Ito's body and brain cells were running low. To keep him cooled to the critical range—below thermal damage, yet above the point, around minus 110 degrees Centigrade, where shear stresses set in—took energy and circulating fluids.

"He can't hold much longer," Angelina said, circles under her eyes.

"Damn it!" Nigel slammed a fist onto the dining room table, where situation reports on Ito gleamed. "We'll have to cobble something together."

Angelina had sat in vigil beside Ito's tank and was worn down, but she knew those systems better than anyone, and her slow, sad shaking head struck a heavy weight into Nigel's heart. "No use. We need to get back to our own era. Then I could find supplies."

"If we hit a longer pause," Nikka said hopefully, "we could go out, forage—"

"No time, our pauses are getting short. And out there it's strange." Angelina dismissed the idea with a tired wave of her hand. "I wouldn't trust anything I got."

"That damned flickering is faster and faster anyway," Benjamin said.

"I hope it means we are—" Nikka hesitated with the instinctive rectitude of a scientist—"in some sense, accelerating toward the wormhole mouth."

"I hope, too," Angelina whispered, "I do, I do."

Nigel had grown up in a properly skeptical English home. He doubted the polite glacial veneer that the Church of England had become, coating a flat disbelief in all things super-natural or super-human, squashing all morality into a pale, thin social ethic. No God need apply in the CofE, the only faith known by its link to a country of the mind, Church of England, hallelujah. *The comfy doubt of frayed religiosity*, he thought.

The Esty had taught him that space and time were malleable, folded forms of each other. Now they had transcended time as easily as one moved in space—a property ascribed in ancient texts only to God, and an omnipotent one at that.

If there was a God, then He or She—more probably, he thought—It, acting in strict accord with physical laws (which presumably It had made—but there was an interesting argument there, too), could reach back in time. Could influence the past, even though to Nigel the events had already happened. This idea he had worked over in his mind until he began in a quiet and regular way to pray. Nothing could have surprised his younger self more, he was sure.

He had known and loved people who had died hard deaths. He asked God to manifest Itself in a previous time—not to change the course of events, but to enter into the minds of the dying. To drain from them the unbearable torments, the sharp pains, the cutting remorse, the freezing fears that forked into them in their last agonies.

Maybe it was possible and maybe the big It would do it. And maybe not. But having thought of it, he knew that he had to try. Names now, people then. Agonies spent.

Then, quite illogically, he prayed for Ito. Whether his son's fate lay in past or future was a riddle to him now. When he closed his eyes he saw Ito as he had been, returning from foraging while the family lay ill. His wind-burned face was dark, curly hair black and looking oily. A lopsided grin split the tired face and on an impulse Nigel had embraced the man his boy had become.

Now that was how he saw Ito. Not as the body floating in suspension here in their house, a thin hope.

The flickering sped up.

Blaring brilliance cascaded down upon them from wrenched timestone above—followed immediately, in a single breath, by utter sullen dark.

Nigel and Nikka were standing on their porch, he smoking a cigar out of sheer distraction, when the scene outside jumped again. Sparkled. Settled somehow into place.

"We're back!" Nikka cried.

"It's . . . the same," Nigel said. "But look."

Glassy patches marred the familiar topography. Spikes of erupted timestone thrust up through the groves of fruit trees, vomiting yellow-hot liquids. Events peeled off the upthrust peaks, unloosing booms and cracks.

Benjamin and Angelina ran outside onto the lawn, shouting. A swirling sphere of darkness like a pulsing bruise came gliding through the air in the distance. "It's our home, but—it's changed," Angelina shouted against a rush of hot wind.

Their raccoon ran out of nearby bushes and scampered onto the porch. It said very clearly, "Welcome back."

Nigel picked up the ball of fur and found it weighed more than he

remembered. He had missed its bandit eyes and pesky personality. With sheathed claws Scooter climbed onto his shoulder without hesitation. When he looked back at the purpling sphere it looked closer. Behind it now loomed a mottled, dusky shape. Nigel stopped breathing.

"Grey Mech!" Benjamin yelled.

"They have been waiting here," Scooter piped precisely.

"They?"

"Others arrived, fought. One remains."

Nigel was startled. This simple pet had somehow acquired remarkable speech. "How long have we been gone?"

"A few moments."

"A few—"

"Forces have contended here, destroying much of this Lane."

With a black paw Scooter gestured toward smoky recesses in the far distance. The timestone bristled, skinned of its former abundant greenery. Dirty gray fumes spread like foul fog everywhere.

"Why?" Nikka asked the beast, wonderingly.

"The one above waits for you, I believe."

Nigel eyed the slowly approaching bulk. Planes of slate-grey mass, an air of threat. "The patience of watchdogs. Umm, most admirable. But it's sniffing up the wrong leg."

"It knows why you were sent," the raccoon said.

"Sent?" Nikka asked.

"We could only orchestrate the Grey Mech to begin the process, by deceiving it about the importance of this particular wormhole," Scooter said.

"You sent?" Nikka shot back. Scooter licked its paws as if searching for scraps of food it might have forgotten, a familiar gesture that contrasted with its suddenly fluent diction.

"Unfortunately, we do not have the means to destroy it," the raccoon said calmly.

Nikka's face darkened. "What the hell do you—"

"Still, it is cautious. The wormhole mouth orbits this spot. Such dynamics are a vestigial remnant of the stress tensor which formed with your passage. The Grey Mech fears the worm mouth. It will not kill us without taking care."

"How comforting," Nikka said.

Hot winds rising. The bruised-purple sphere jittered in the high air. The family shrank back, looking at Nigel, but he had not the slightest idea what to do. He regretted not listening better when Nikka was explaining all this. He opened his mouth without knowing what he could say.

From the far side of the Lane, mountains split open. It was as though some unseen force had unzipped the entire range of peaks, cutting a crack that widened—and another blue-black sphere burst from it. Yellow energies played around it. Gales rose, stirring dust in the yard.

"The other mouth of the wormhole," Nikka whispered. "It's trying to tie itself off."

Nigel shouted against the gale's howl, "But you said they can't—the couch something, how—"

"The Cauchy Horizon. It prevents their linking up—but the elasticity along the worm can whip them toward each other."

"Why in hell—"

"The energies! Nobody's ever gone as far as we did. The stored capacitive stress—"

A gust snatched her words away. In the purpling vault above them the two spheres grew, swerving erratically across a wracked sky. Storms yowled. Jagged teeth of timestone wrenched up, sucked by tidal forces.

Nigel felt himself lighten, as though falling. Nearby tree limbs stretched upward, as if beseeching the tumbling horror above. Tides, stretching and drawing.

Screeching winds, tumbling debris. A lump smacked him in the leg. "Inside!" Nikka called.

"No!" he shouted. Something told him that to burrow in now was death.

The raccoon said calmly, "We had planned well, but this eventuality goes beyond our ability to control events. I apologize."

Wailing winds ripped up the roof of their house. Tiles shattered to the ground and the Walmsleys ducked. Benjamin and Angelina ran inside. The two worm mouths accelerated, veered. Crashed into hillsides and smashed them to spraying stones. Concussions shook the ground. A shock wave slammed Nigel and Nikka to the flooring of the porch and the railing split off. Nigel tasted blood in his mouth and his arm, nearly healed, sent him a spike of livid pain.

"Inside!" Nikka called, yanking him up to his knees.

The purple virulence above crackled and crashed. Twin monstrosities, swerving across a fevered sky. On his knees, he saw the Grey Mech approaching, keeping away from the ripping, darting worm mouths. Still after them.

"It wishes to erase the information you have brought back," the raccoon said serenely. Though its claws dug into his shoulder, he noticed.

"Damned determined," Nigel said.

"It knows what is at stake."

"Well, I don't, and—" at that moment he saw a possibility.

"Nikka! Let's go! To your goddamned Causality Engine."

She looked at him in stark disbelief. He yanked on her arm. She stumbled after him, across the yard.

Snapped limbs from the orchard covered the white steel console. He tossed them aside with furious energy. "Got power stored?" he shouted against the roar.

She nodded, lips compressed. She pressed her wrist to the command slot, began sequencing. "Why?"

"Cauchy Horizon!" He pointed to the nearest wormhole mouth. It bristled with sparks, discharges sprouting like electric-blue hair.

"What? That's a theoretical—"

"Does that look theoretical to you?" When the rapidly dodging wormhole apertures zoomed near each other, the air fried with orange energies.

Nigel pointed at the nearest wormhole opening, a foggy sphere that shot across the sky. "Push that one!"

She aimed the device. Sheets of numbers and graphics slid across the console face. "Where?"

"Toward the other—but no, wait!"

The mouths yawned, pulsed. The Grey Mech was below them but with the erratic paths they followed—it would be possible—

"There! Aim it up—and to the left." He pointed wildly. The right geometry would occur only for a second.

A wormhole mouth screeched down the sky, shredding clouds and debris, tossing off spurts of orange.

Its twin followed, the other end of the unimaginably long corridor seeking to find itself. To close, to marry, to then contract into a singularity of event-space, intact to itself for a time beyond duration—

"Now—*there*. Quick."

She fired the gravitational transducers. The pulse knocked them flat. Popped their eardrums, brought blood from nose and ears.

Nigel rolled, caught up against one of the ceramic cylinders. He looked up to see the nearest worm mouth rushing toward its other end. The air between them fractured, sparked, broke down. The net momentum took both wormhole apertures downward—toward the Grey Mech.

A sandpaper rasp, rising. Tendrils of shooting energy frayed between the two mouths.

And splitting the space between them, where the quantum foam began to erupt with spontaneous particles, the Grey Mech tried to flee. Too slow. Far too slow.

"I attribute it to your hunting strategy," the raccoon said.

They were sitting on the ruined front porch. A wrecked landscape smoked as far as the eye could see, cracking as it cooled.

"As I understand it, all evidence suggests that you hunted in groups, and were unafraid to take on quite sizable game, such as mastodons." The raccoon smacked its lips appreciatively at the fish Angelina had given it, freshly defrosted. "Your method, though, was not to rely upon brave displays of courage."

"Sounds insulting to me," Benjamin put in.

"Not at all." The raccoon looked startled, the first time Nigel had seen that expression. He was learning to read the supple meanings that creature could impart to the merest curl of its full black lips. "That was inventive."

"How do *you* know?" Nigel asked. He was all soreness and fatigue, but did not want to so much as lie down until he understood what had

happened here. Then he was going to sleep for the rest of his life, if not longer.

"I am of your phylum. I know the courses of evolution." Scooter licked itself scrupulously. "Long ago, your species shouted and waved sticks and ran after your prey. Typical grazing animals spook easily, run well, then tire. They soon stop and go back to cropping grass."

"Yech!" Angelina grimaced. "Nobody eats meat."

The raccoon gave her a baleful glance. She hastily added, "Well, I don't include fish."

The raccoon went on. "Most carnivores who fail to make a catch on their first lunge also lose interest. They rest up a bit, and wait for another target to amble by. Your species did not. That promised the qualities we wished to harness. Alas, they were present in only a fraction of you, so we had to select just the right circumstances." It regarded them all as though they were museum exhibits. "And individuals."

"To do your dirty work?" Nikka said with a glint in her eye.

They were waiting. Inside, Ito's body was cycling through the diagnostics which would see if he could be fully restored. They had gotten the needed tech from ruins beyond the next line of hills, a small fraction of the town still standing. Now there was time to sit and think.

Nikka's mind was restless, awaiting news of whether her son would come back to her. And this confident raccoon irritated her quite a bit.

"Instead, your species would pursue the same prey to its next stop. Surprise it again. Run it until it outdistanced you. How those grazers must have hated you!" It cackled suddenly.

"You weren't particularly fast, but eventually you could run down the tired grazer. A guaranteed result, if you persisted. In this tenacity lies your major difference from other omnivores, and certainly from carnivores." It cackled again. "You boast of your brains, your opposable thumbs, your two-footed grace—but stubborn perseverance is rare, very rare—and we needed that. So we had to use primates . . . alas."

"Why 'alas'?" Nigel asked.

"You are cantankerous and difficult to manage. Sorry, but that is true."

"Well, you weren't the best pet we ever had, either," Angelina said.

"I was a poor actor. Actually, I am a diplomat."

"You don't seem all that diplomatic," Benjamin said.

"I negotiate. In the Lanes there are many kinds, but your strategy is shared by no other species here. Some Lanes hold octopuslike creatures who manipulate objects and snare others, but cannot pursue game. Many bright herbivores, too—charming, but in the wrong business to begin with, hemmed in by short attention spans. We needed something which would, for the most abstract reasons, sustain effort over times significant to your own well being."

"Uh huh," Nikka's mouth was thin, skeptical. "And our 'abstract reason'?"

"Curiosity, basically."

"You based your strategy on our getting interested?" Nikka snorted with derision.

"We chose carefully. After all, how did this family come to be settled here?"

Nigel laughed. "We came this far, why not farther? Touché!"

"The Grey Mech didn't have anything to do with it?"

The raccoon lowered its head, concentrating on grooming itself. Nigel guessed that it was embarrassed—to the extent that any human category could apply to this strange thing. "Well, we did have to begin matters."

"By slamming us forward in the wormhole," Nikka's eyes were narrow slits. "So we couldn't get back."

"Such are the vagaries of any wherewhen string," Scooter said.

Nigel said, "By 'wherewhen string' I suppose you mean a wormhole path through the Esty?"

"Yes, we term it differently—"

"Cut the techtalk!" Nikka fumed. "This, this *pet* got us blown—"

"Let it go on," Nigel said, hoping he could calm her.

Scooter had dashed down the porch. It turned back and said hesitantly, "We calculated that if the Grey Mech knew of this particular vortex, and guessed our plans, it would attempt to seal it—which would boost you along in the wherewhen string, I mean, the wormhole . . . perhaps."

"Rodent!" Nikka sprang up and kicked at the raccoon. It squealed and scampered out of the way. Nikka followed.

It cried, "I assure you, there was no—" another kick, closer this time—"no other way!"

"You risked my family for, for—" Nikka sputtered angrily.

It reached safety, hanging on a splintered beam beneath the overhang of the wrecked roof. "For greater causes than you can know," the raccoon said, regaining its dignity.

"You little rat!" Angelina swiped, but it swung further away.

It said earnestly, "The knowledge and data you bring—and do not forget the recording devices in your Causality Engine will give us precise measurements—can reconcile the long struggle between us, the organic living Phyla, and the mechs."

"You risked our lives—my son!—on a *plan*—"

Angelina threw a chunk of roofing at Scooter, narrowly missing. Nigel stood, blocking her from another shot. They were not truly angry with this raccoon, he saw. Ito, lying inside, body worked and threaded, battling, his fate hinging on mechanical help—that was the root of their rage. And until their wait was over, they would know no rest.

Nigel sighed, held up a hand. "Belay that! Let this thing speak."

"Thank you." It smoothed its fur and began again.

There was only one Grey Mech of their era. It had just perished above their home, fried by the torrents of particles sputtering into the space between the two wormhole mouths.

Causality was indeed insured, by the frying foam of the quantum.

The wormhole could not connect, could not break through the Cauchy Horizon. In the end, Nature kept its causal books balanced with a furious storm of emission, dissipating the wriggling elastic energy of the wormholes.

And all energy can be used as a weapon.

The Grey Mech was a censor. It had wanted to stop the information about long term mech purposes from reaching the organic life forms of this era. The mechs feared that their organic enemies would disrupt their gossamer-thin experiments in electron-positron plasma. Simply flying a starship's roiling plasma exhaust through a delicate whorl of magnetic fields and lacy filaments could devastate the work of centuries.

"Wouldn't mind doing just that," Benjamin said when he heard the idea. Antagonism to mechs ran deeply in the blood of many organic races, not just humans.

But up ahead along the curve of grand time, other Grey Mechs arose.

The mech-human war stretched like a stain across millennia in the Esty. Nothing could truly stop the inherent competition, growing out of a Darwinnowing commanded in all phyla and kingdoms of life—not even this strange voyage along the "wherewhen string" and back.

But its effects could be changed, with adroit care. Up ahead, solving the puzzle of how to make an electron-positron plasma would require cooperation of both mechs and organics. But that alliance could never come about if the past could spread its venom to the future.

So to thwart this era's mechs, a future one had voyaged into its *own* future—where it knew the crucial moment awaited.

There, on the wasted plains, as their tiny fragment of a farm stuttered at the edge of infinity's abyss, the Walmsleys had learned the mechs' final destiny. Only that truth could disarm the age-old hostility between the two great Forms of life.

"That is my task," the raccoon said. "As a diplomat."

"A diplomat from *where*?" Nikka demanded, still not quite convinced.

"A higher order than yourselves." The raccoon groomed itself, as if this were everyday talk. "Did you think the galaxy was a simple division between organic forms and mechanicals?"

"Well . . . yes," Angelina said lamely.

"There are other substrates. Other media, perhaps I should say."

"Such as?" Nikka pressed.

"Magnetic fields. Collaborations of organics and mechanicals. And inscrutable symphonies of all three, forms that I can but glimpse." Its bandit eyes glittered and Nigel felt a keen intelligence having fun. *Playing with a pet?*

"That's who sent the bodies back, started all this?" Angelina asked.

"Oh no—those were sent by humans. They quite rightly sought to warn you."

"And you work for something bigger, higher?" Nigel asked.

"So I believe. Do you know who you 'work for'?"

Nikka laughed suddenly. "We thought, ourselves."

"There are larger agencies," Scooter said, its eyes gazing reflectively into the distance. "We might as well call them gods."

Nigel thought of the God he had appealed to, for Ito. A God outside time somehow, a bare minimal God who could at least salve the wounds He could not prevent. In a universe apparently devoid of meaning, that was the merest scrap one could hope for. But the raccoon spoke of higher orders still.

"I do not believe we can in principle answer such questions," Scooter said. "They may function outside our conceptual spaces, their acts indistinguishable from natural law."

Nigel suddenly wondered whether the human category of science, and physical order, might be a reflection of something deeper. What imposed the order, after all?

He asked the raccoon, but it was silent.

Nigel remembered long ago thinking, *I wonder if our pets sometimes feel what we're feeling now*. Confronted with something nonchalantly superior, what did a pet feel? Awe? Mild irritation at the presumption? He looked at the raccoon, which had deceived them so long, and thought about the muscular intelligence that lay behind such a simple act.

"You're pretty arrogant," Nigel said.

"Do not mistake the messenger for the message," Scooter replied, licking itself.

"Such a neat creature, too," Nigel said sarcastically.

"Sometimes it is not particularly pleasant to be a conscious being,"

Scooter piped, "but it is always a pleasure to be a mammal."

Nigel realized that this animal was really quite a remarkable job. Scooter looked, smelled and acted like an Earth-derived raccoon, fresh from the gene vaults humans had brought here.

But it was a construction, made by—what? The Old Ones?

And what were *they*? The semi-humanoid thing he had seen at the stutter-point? Had that thing sent back the bodies, to catch the eye of curious, persistent humans? And unfurled the Esty itself, to show those humans the phosphorescent positron sky?

Awe, he remembered, was a mingling of fear and reverence. Something in him, hominid-deep, had a cold, clear fear of the little raccoon. And what it implied.

Perhaps all this would bring peace with the mechs. Perhaps they would be able to get their farm back into workable order. Perhaps.

None of that mattered a jot, compared with the moment when Ito emerged from the cyclers. Gray, muscles shriveled, skin patchy. Alive.

"I . . . what went . . . on?" Ito shook his head and tried to sit up. His mother restrained him. Which was difficult, because she was showering him with tears at the same time.

He blinked, solutions still giving his face a glossy sheen. "I'm, ah, hungry." He frowned in puzzlement as they all burst out laughing.

He was back. But not all of him, they learned in the weeks ahead. It was *an* Ito but perhaps not *the* Ito.

No transcription is ever perfect. Some brain cells were lost, unread by the recorders, mangled in the minute processing.

Between Nigel and Ito there was a distance, one they never bridged. Again Nigel could not truly tell if this arose from the errors in salvaging Ito or in the coolness that develops all too often between father and son. He would never know.

Nikka did not seem to notice it. But she made a remark years later which meant that she did know. That eased the sad separation he felt from this man who had come back from death and been changed by it.

Fathers and sons speak inevitably across an abyss. Time rubs. It is never really possible to do anything over again. The Cauchy horizon permits no erasures.

Nigel went for a walk days later, when the house was secured and he could stride again on sturdy legs.

At university he had learned scraps of poetry, and one returned to him now.

*And there grow flowers
For others' delight.
Think well, O singer,
Soon comes night.*

In the dimness which was not a true night he thought of the time when the Esty would unfold, up there in the far future.

He went to a hillside where he could see a profile of the distant other side of the Lane. Here it was somewhat like the impossible horizon he had seen at the other end of the wormhole. He remembered the gauzy filaments hanging in that strange sky. And he thought of the Cauchy horizon, beyond which physics could not see.

He sighed, like breathing in clouds of cobwebs now, and tried to feel how it would be.

So plasma entities of immense size and torpid pace will drift through a supremely distant era. Sure and serene, free at last of enemies.

Neither the thermodynamic dread of heat death nor gravity's gullet can swallow them. As the universe swells, energy lessens, and the plasma life need only slow its pace to match. By adjusting itself exactly to its ever-cooling environment, life—of a sort—can persist forever. The Second Law is not the Final Law.

And they will have much to think about. They will be able to remember and relive in sharp detail the glory of the brief Early Time—that distant, legendary era when matter brewed energy from crushing suns together. When all space was furiously hot, overflowing with boundless energy. When life dwelled in solid states and mere paltry planets formed a stage.

And frail assemblies of chemicals gazed at the gliding plasma forms and knew them for what they were. Destiny glimpsed, then lost.

Suddenly he felt a fierce conviction that this would happen. That it

must. That man and mech would work together to this final, farflung destiny. That they would finally reconcile and realize that intelligence transcended the mere substrate that embodied it.

He felt the stars then, beyond the folds of the Esty. Somewhere in that far night a bell carried a low still tone and bore him momentarily up into the swarming jewel lights so that he walked not under but among them, for a last time jaunty and irreverent, laughing like a thief of time loosed in a glowing orchard, with more paths for the choosing than any mind could count.

He staggered, wheezing, and turned toward home. A sip of wine as a nightcap, perhaps. A fine bottle from their own cellar. He and Nikka would sit and smile and not talk about his indices. Not any more.

Perhaps they would speak of Ito's past courtship adventures, which had earned him something of a reputation, of Angelina's need to go off to study in high citadels of knowledge, for her grasp had now exceeded their farm. Or of the raccoon, which still lived in the Lane and was very busy. Going about something it would not say, perhaps could not say.

The subject would not matter much. The present was now all that mattered. A sliver so thin, yet as wondrously wide as a tick of time. ●

THE VAMPIRE SINGS

I cannot see except by touching grief.
I am a blind man when it comes to light.
I'll steal your pleasures like a common thief.

You'll feel me take them stunned by disbelief.
A poet cannot care what's wrong or right.
I cannot see except by touching grief.

I cannot love the green, undying leaf.
I'll come upon you like a subtle blight.
I'll steal your pleasures like a common thief.

I'll weave them into image and motif
and give them to a world that hates their sight.
I cannot see except by touching grief,

love's ash, the bones of love's belief
that turns to shadow what it once made bright.
I'll steal your pleasures like a common thief.

The chill of life is that all love is brief,
I warned you that on our first night
I cannot see except by touching grief
I'll steal your pleasures like a common thief.

—William John Watkins

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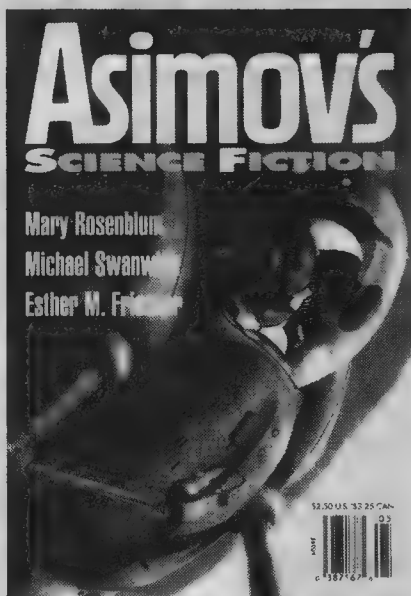
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ON BOOKS by Norman Spinrad

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The publication of the second edition of *The Encyclopedia of Science Fiction*, edited in this incarnation by John Clute and Peter Nicholls, is, well, a massive event. I haven't weighed the tome, but at 1370 pages I'm sure that the post-people who deliver this stuff are happy that SF publishing events

don't get much more massive than this.

The first edition of *The Encyclopedia of Science Fiction*, the one edited solo by Nicholls and published in 1979, was invaluable to me as a critic, and, I am reasonably sure, to anyone else writing criticism of the genre with any minimal standards of accuracy and historical connection.

I started doing these essays soon after it was published, have been writing four a year ever since, and have rewritten a hefty portion of them into a book on the field of my own, *Science Fiction in the Real World*. It might be going too far to say that I could have done none of this without my trusty old dog-eared copy of the Nicholls *Encyclopedia*, but for sure it would have been damnably difficult to do anything like a responsible job without it. Exiled to a desert island with my laptop, a mailbox full of incoming, a set of deadlines for this column, and a choice of one other volume I could bring along, the old *Encyclopedia of Science Fiction* would surely have been it.

Say what you like about the opinions expressed by the diverse hands who wrote the entries in the Nicholls *Encyclopedia*, argue with

its perhaps naturally British over-emphasis, but it was what it claimed to be: a true encyclopedia that covered the history of science fiction and, circa 1978, its breadth too. Biographies of all the major writers and almost all of the minor ones since the birth of the field, with rather complete and reliable bibliographies of at least their book-length works. Bios of the major editors and artists, too. Histories of the magazines and publishing houses. Decent coverage of cinematic and televised SF, such as it was. Even reasonably broad coverage of non-anglophone SF and its practitioners.

And now, fourteen years later, here we have the second edition, edited by Nicholls and John Clute, with a contributing editor credit on the title page for Brian Stableford.

Many of the individual author entries have not expanded greatly, being compressed at the beginning somewhat to make room for the succeeding fourteen years of literary history, but the second edition is still about 600,000 words longer, not much less than twice as long as the first edition's 730,000 words.

Okay, a lot has gone on in the last fourteen years, new writers, new editors, new magazines, new TV series, and so forth, but . . .

Twice as long?

As much wordage to cover the last fourteen years as was required for the sum total of the genre's previous history?

Does not compute.

Something must have changed drastically in the *nature* of the material covered by the two editions of *The Encyclopedia of Science Fiction*.

And since both set out to cover "science fiction" and admirably succeed, a drastic change must have in hindsight occurred in what is *meant* by "science fiction" since 1979, and the publication of the second edition of *The Encyclopedia of Science Fiction* forces us to ponder *what*.

The first edition was descriptive rather than prescriptive, and so is the second. Both are without peer as reportage. So if there is something unsettling about the second edition of *The Encyclopedia of Science Fiction*, don't blame the messengers. What has changed is not the standards of Nicholls, Clute, and Stableford, but the nature of the semantic import of the words "science fiction" themselves.

Indeed, the editors agonize over this at some length in the introductory material, as they try to explain why they've included what they've included and why they've left out what they've left out without violating their objectivity by addressing the central and distressing truth.

The anonymous author of the jacket blurb, however, displays no such compunction:

"The world of science fiction in the 1990s is much more complex than it was back in the late 1970s. The advent of game worlds, shared worlds, graphic novels, film and tv spin-offs, technothrillers, survivalist fiction, sf horror novels and fantasy novels with sf centres has necessitated a radical revision. . . ."

Indeed.

The Summer 1993 *Bulletin* of what used to be called "The Science Fiction Writers of America" and

what is now called "The Science Fiction and Fantasy Writers of America" contains an interview with Steve Pagel. Here is his job description:

"Stephen Pagel is the buyer of science fiction, fantasy, and role-playing books and materials for Barnes & Noble Corp, Inc. In that position, he is responsible for what goes on the shelves of a thousand stores nationwide, including six chains: B. Dalton, Barnes & Noble Superstores, Scribners', Doubleday Book Stores, Book Star, and Book Stop."

What goes on the *science fiction* shelves, that is.

What Clute and Nicholls wrestle with in the second edition of *The Encyclopedia of Science Fiction* is the same semantic transformation that their publisher's blurb writer addresses up front and the pragmatic marketing reality of Mr. Pagel's duties as "science fiction buyer" for Barnes & Noble.

To wit, that "science fiction" no longer means *science fiction*. Much of what is included in the second edition of *The Encyclopedia of Science Fiction* has nothing to do with "science" and some of the material that Mr. Pagel is commissioned to buy for his science fiction racks isn't even *fiction*.

By 1993, "science fiction" has long since come to mean "SF."

Clute and Nicholls twist and turn in the wind over this transformation, but they never quite confront the central issue—namely is this to be the second edition of *The Encyclopedia of Science Fiction* or the first edition of *The Encyclopedia of SF*?

Do they want to cover a sphere

of literary discourse called "science fiction," encompassed by certain admittedly fuzzy boundaries of theme and content, or do they want to use my own ironic definition of science fiction, namely that science fiction is anything published as science fiction?

They never seem to quite decide, and probably that is as it should be. For, like the 1979 edition, the 1993 edition of *The Encyclopedia of Science Fiction* is meant to be a freeze-frame overview of the state of "the world of science fiction," and if the editors have difficulty deciding just what that world is, well, a perusal of major science fiction book stores, of the SF racks of the chains, or the fanzines, or the huckster rooms at Worldcons, would certainly seem to indicate that their ambiguity is an accurate mirror of the state of science fiction's soul itself.

If it may still be said to have one.

Those who have dipped into these columns from time to time probably already know that my terminological solution is to reserve the term "science fiction" for fiction with an extrapolative element which takes place in the realm of the possible if not necessarily the probable, and "SF" for everything, including "science fiction," published under that inclusive logo.

However, these days, even *that* distinction breaks down.

These days, both science fiction and SF *imagery* are employed in everything from role-playing and video games to Billy Idol's *Cyberpunk* album to magazine ads and TV commercials for products that have absolutely nothing to do with

either the genre or fiction itself.

These days, not only is much SF not science fiction, much of it isn't even fiction.

These days, SF means anything *marketed* as SF.

These days, the *packaging* is the product.

Therefore what goes onto the "science fiction" racks is determined not by any formal or thematic or literary definition of the term but by marketers' perceptions of what the consumers drawn to such areas of the bookstore by "SF" *packaging* will most readily purchase.

Worse still, a certain literary Gresham's Law seems to be operating, as market forces not only determine what gets out there on the SF racks and therefore what tends to get written, but what the reading public perceives "science fiction" to be—the *stuff, such as it is, that they find on the SF racks*.

It's a vicious circle, or rather a downward spiral, certainly in terms of level of literary intent, and in the long run, I suspect, in terms of sales as well.

Science fiction sections in general bookstores—be they the chains that have come more and more to control a determinative segment of the market, or the remaining independents—contain a finite number of rack spaces to be filled.

In the absence of any idealistic literary passion (a subjective quality that the objective quantitative software of the market economy does not factor in), what these spaces are filled with is determined by what those whose jobs it is to fill them believe will maximize sell-through, that is the number of cop-

ies sold in that space per unit of time.

Obviously the ideal item is something related to something else with a proven sell-through record, be it an earlier book in the same series, or a book with a brand name on the cover like Clarke or Asimov, or, even better, something benefiting from the effective lavish free advertising of a tie-in to a successful film, TV series, or game.

And so that is what dominates SF rack-filling strategy. And so the demographic profile of the people who buy science fiction in the eyes of the marketers who control the rack space becomes, what else, the sort of consumers who move *those very books* off the SF racks, thus closing the loop of the self-fulfilling prophecy.

And so science fiction is packaged and promoted accordingly. Turning on the targeted consumers and turning off everyone else.

Who are these targeted consumers?

Who else? Aficionados of role-playing games and video games, *Star Trek*, *Star Wars*, novel series, and share-cropped novels with recognizable Big Names on the cover, of course!

Certainly *not* the minority of educated and sophisticated cognoscenti who are reasonably well-read in the field, have some familiarity with the previous works of the writers, peruse reviews for information, and know that a novel by Dick or Disch or Robinson fortunately *cannot* be judged by its cover, has little in common with the latest *Dungeons & Dragons* novelization or installment of *Schlockworld Messiah* even if they

do look the same and compete for the same rackspace.

These are the readers who hold their noses and frequent the SF racks *despite* the efforts of the packagers and marketeers. Readers with the necessary motivation and special knowledge.

While uncounted and uncountable other readers without such knowledge who would enjoy serious science fiction if they were induced somehow to try it are turned away by who and what they see in the SF sections of the bookstores.

Thus is "SF's" sell-through maximized while the sort of readership that inspires writers to be brave, to be adventurous, to stretch their wings to the fullest and try to soar, is diminished.

Writers *do* need such readership to keep their work spiritually and idealistically alive and their creative juices flowing, or at the very least they need to maintain the illusion that such readers are out there somewhere.

But these days, for all too many of us, the reaction upon confrontation with the reality of "the world of SF," the stuff on the racks and the sort of readership it draws, is "what's a nice kid like me doing in a place like this?"

The answer, of course, is that hanging around in this low dive, being marketed with this great wad of schlock, seems to be the price one has to pay to continue to write and publish science fiction.

And the paradox is, the glorious paradox even, that despite the erosion of literary standards and editorial passion and idealism, despite the decline of anything like an overall ambiance nurturative of

serious, heartfelt, adventurous, spiritually and intellectually alive science fiction, more such work has been published in the last decade and a half than in the rest of the previous half century. And the pages of the second edition of *The Encyclopedia of Science Fiction* are enriched with entries for scores of fine writers who have entered the lists during that period.

If you are reading this, you have bought this magazine, or at least have enough interest in what is between its covers to cop a free read one way or another, so among present company I think I need not explicate the esthetic and literary reasons for continuing to write and publish serious science fiction.

Continuing to have it published as "SF," however, is rapidly becoming another matter.

Take the case of Octavia E. Butler, for example. Octavia Butler began publishing science fiction in the 1970s, and has more or less been producing serious worthwhile work at a measured pace ever since. Her short fiction has won the Hugo and the Nebula. The bulk of her novelistic oeuvre has been published in hardcover by regular SF lines, and, moreover, most of her novels have the series connections that generally enhance an SF writer's commercial viability.

Yet here, in 1993, we have her tenth novel, *Parable of the Sower*, published in hardcover by an outfit called Four Walls Eight Windows. No disrespect to the publisher intended, but it is clearly not a major, and while the blurb material certainly does not disguise the undeniable fact that this novel is science fiction, the classy package is

hardly calculated to place it in the SF racks, and Butler attempts to distance herself from the genre on the jacket by declaring: "I write about people who do extraordinary things. It just turned out that it was called science fiction."

Don't we all? Ain't it the truth?

The first person narrator of *Parable of the Sower* is Lauren Oya Olamina—female, teenaged, inhabitant of a terminal behavioral sink version of the Los Angeles area in the next century, black, empath, and someone who will become a kind of guru in adulthood, in roughly descending order of characterological and story importance.

Basically this is a kind of Heinleinian survivalist science fiction written with a stylistic parsimony and elegance and on a level of psychological realism that Heinlein himself never attained and rarely if ever tried to achieve.

What counts most here is Butler's detailed description of the economic, political, social, and psychological disintegration of American society, closely focused on a small cast of characters as described in the diary of her narrator, as Lauren's little fortress community in Southern California is besieged and destroyed, as she becomes the leader of a band of refugees that accretes around her as they all flee northward.

Lauren seems far older and wiser than her years, but this is not a flaw in Butler's characterization, it is one of the touchstones of her character's personality, and as such Butler makes it work admirably. That she is black is of some importance, since one of the

strengths of the novel is Butler's all-too-believable portrait of the economic powers that be in a destitute America forcing its workers stepwise into something approaching slavery, and Lauren's ethnic identity and connection to its history lends this a certain resonance.

Peculiarly enough, the two most strongly science fictional elements in Lauren's identity seem to have the least story and characterological importance.

Lauren is an empath, thanks to a drug taken by her mother when she was pregnant; she literally feels other people's pain as her own. This is hardly an original concept, but Butler's treatment of it is. Feeling the pain of others doesn't necessarily make Lauren like them any better, and in a fight, of which in this extremely realistic view of an extremely violent barbarism there are plenty, it causes her to shoot to kill, or to dispatch the wounded, since their pain incapacitates her for further action until it is terminated by death.

Butler treats Lauren's "hyper-empathy" more as a handicap which she overcomes than anything else. Except for a certain heightening of the narrative tension in some of the combat sequences, the novel would have worked about as well without it.

Strangely enough, for me at least, the novel would have worked *better* without the whole Earthseed business that seems to be of far more importance to the author than it is to the real story.

The novel is strewn with quotations from something called "Earthseed: The Books of the Liv-

ing" that the young Lauren is in the process of writing, and the novel ends with her founding a community near Mendocino based on its principles.

What are those principles?

Butler states them once, elegantly:

"All that you touch

You Change.

All that you Change

Changes you.

The only lasting truth

Is Change.

God is Change."

True wisdom or parlor Buddhism, you pays yer money and you takes yer choice, as with any other religion, science fictional or otherwise. The rest, and there is plenty, is really only Talmudic commentary on this core. The other aspect is the Earthseed business itself, the contention that this somehow implies that the destiny of humans is to spread to the stars.

What this means to the closure of a novel in which a band of people survive near-future neo-barbarism to found a little agricultural community is beyond me, though the suspicion that it is a set-up for a sequel or even a whole cycle of sequels unfortunately is not.

What it means to the existential plight of a serious, dedicated, talented writer of science fiction like Octavia Butler is strangely touching.

Here she is, with her tenth novel published by something like a small press and probably at a lower advance than the last one published by an SF line. The book has a package designed, however successfully, to get it off the SF racks, down to a disclaimer from the au-

thor that she is not now nor has she ever been, and what does she go and do?

She incorporates two science fictional elements in a novel that doesn't need them, indeed which might be better without them.

Why?

Because she can't help herself.

Because, protestations and attempts at cagey career moves to the contrary, Octavia Butler is a real science fiction writer. And these are obviously neat ideas that she cares about, so, hey, what can a poor girl do. . . ?

Harvey Jacobs didn't have nine novels under his belt when *Beautiful Soup* was published by Celadon Press as an original trade paperback in 1993. In fact, he had only two others, but he's been publishing a kind of science fiction in short story form since the 1960s. *Beautiful Soup* is a fine comic novel, and certainly qualifies as science fiction as well as the stuff that made the reputation of Pohl and Kornbluth or Vonnegut circa *The Sirens of Titan* or *Cat's Cradle*, and the package is festooned with laudatory quotes for previous books by both SF's own Thomas M. Disch and literary heavyweights. And two of his previous three books were published by Harper & Row.

So why has a novel like *Beautiful Soup* been published in what appears to be an obscure small press trade paperback edition rather than by a mainstream publisher or an SF line?

It's hard to believe that quality has anything to do with it.

Beautiful Soup is the sort of comic dystopia that only science fiction can produce. Take an outra-

geous premise, build an insane society upon the relentless extrapolation of its consequences, and then deconstruct it by cranking the whole thing over the top.

In Jacobs' future, harmony has been achieved via the Hoffenstein Human Bar Code. Each person's potential is graded at birth and clearly emblazoned in bar code on their forehead for all the world to read. Extrapolate this notion with manic logic and you have Jacobs' screwball comic inferno America.

That is the set up.

James Wander, the protagonist, as is traditional in this sort of thing, has it made at the outset. He's happily married to the daughter of a rich presidential candidate and slated for upwardly mobile bliss thanks to his golden Bar Code when the event occurs that sets the story of his deconstructive odyssey in motion.

An unfortunate accident transforms his Bar Code into that of a can of pea soup.

In Jacobs' loony society, you are what your Bar Code says you are, period. So Wander's social identity is transformed from that of an upwardly mobile yuppie to that of a decidedly downwardly mobile can of soup.

Down, down, down, around, and around, and around he goes, prat-falling through Jacobs' high quality satirical schtick—politics, jail-house life, show biz, bizarre sports spectacles, und so weiter.

Well, if this isn't publishable by a regular SF line, then neither is *The Space Merchants* or *The Sirens of Titan* or the entire oeuvre of Ron Goulart. It's funny, it's pointed, and, unusually for this sort of

thing, Jacobs manages to imbue it with a certain characterological depth, a warmth, a pathos even. Satire it is, but satire, as it were, with a human face.

So why wasn't it published by an SF line?

Aha, you may say, upon perusing the package, maybe that's not what Harvey Jacobs wanted. He's been published in *Playboy* and the *Paris Review* and *Esquire*, he's gotten a grant from the National Endowment for the Arts and kudos from Robert Cromie and *Time*. Why would he want his work to appear on the racks sandwiched in between the latest adventure of *Mung the Barbarian* and a novelization of *Star Trek: the Geriatric Generation*?

So why wasn't *Beautiful Soup* published as a mainstream novel by a major publisher?

Like fer instance Harper & Row, publisher of two of Jacobs' previous books?

Could it be that Harvey Jacobs, mainstream credits and all, was so tainted by his long years of occasional visitations to the lowlife literary saloon of science fiction, that no mainstream publisher would publish a piece of unequivocal science fiction like this?

Something like *Sandman*, *Sleep*, by Herbert Lieberman, adds a certain weight of reality to this paranoid supposition.

This appears to be a first science fiction novel, and, taken as such, rather a good one.

Orville Jones, a kind of futuristic Thomas Edison-cum-Daddy Warbucks, has set up the closed world of a huge castle quite reminiscent of Mervyn Peake's *Gor-*

menghast with its indeterminent number of rooms, grottoes, and levels, and so forth, somewhere in the Canadian north.

Jones has made a discovery which renders him extremely long-lived. He has spent a good portion of that long life siring as many offspring as possible, secreting the best of them in the castle and putting them through his own idiosyncratic version of the ideal education for the idealistic purpose of producing a master race of sorts in his own image. In the woods that surround the castle dwell the Woodsmen, a race of disgusting, savage, subhuman dwarves, who worship Jones for reasons that become clear towards the end of the novel.

The first person narrator of *Sandman, Sleep* is Jonathan, one of the Jones's long-lived progeny, and the story, a kind of mystery at least in formal terms, revolves around events occurring after the murder of the unpleasant Mr. Jones.

The novel has its strengths and its weaknesses.

Lieberman writes well on a prose level, and the long sequence where Jonathan and his sister are captured by the Woodsmen, escape, and are chased by them is harrowing indeed. The culture, such as it is, of the Woodsmen is an interesting if disgusting creation.

On the other hand, the existence of this tribe of subhumans is never rationalized or explained in a novel the rest of whose reality seems written to be taken on a realistic science fictional level. Nor is the book particularly original, conceptually speaking.

Still, as a first novel, or even a third, *Sandman, Sleep* would mark Herbert Lieberman as a promising new science fiction writer to watch and nurture.

Except that Herbert Lieberman has published ten previous novels, none of them science fiction to the best of my knowledge (no entry in Clute & Nicholls), and *Sandman, Sleep* was published in hardcover as a Thomas Dunne Book by St. Martin's Press, a house which does have an SF line and has published plenty of similar stuff in same.

While the jacket copy proclaims that Lieberman's last novel, *Shadow Dancers* "landed on the New York Times best-seller list," I suspect it was probably by the skin of its teeth. Judging from the quotes and credits, Lieberman is a mainstream writer of some established reputation but no great fame who decided to try a science fiction novel.

Judging from *Sandman, Sleep*, both Octavia Butler and Harvey Jacobs, for example, are about on a par with Lieberman on a craft and prose level. Butler's work has somewhat more characterological depth and much more extrapolative rigor, and the Vonnegutian *Beautiful Soup* would seem to be much more accessible to a general audience than the Lieberman.

Yet *Sandman, Sleep* is published, if not as a potential best-seller, then at least as a significant novel by a more or less major house, while *Parable of the Sower* and *Beautiful Soup* appear from small presses.

If this is because Lieberman has something which Butler and Jacobs both lack, you tell me what.

Surely the reverse must be true, namely that Lieberman lacks that which Butler and Jacobs both have—an identification with the extended subject of the Clute & Nicholls *Encyclopedia*, the world of science fiction, or, in this context, SF.

Leading to the conclusion that while it may not be so difficult for writers identified with the SF genre to shed their SF identity if they are willing to glide down into small press publication for the purpose, upward mobility is quite another matter.

One who *does* seem to have now managed it is William Gibson, whose latest novel, *Virtual Light*, clung to the bottom rung of the best-seller lists for a bit despite being published by Bantam's SF line, Spectra, although of course they hedged their bet by never mentioning the fatal two words on the package, to the point of eschewing blurbs from SF sources, and cunningly failing to identify the nature of the Hugo or the Nebula.

Still, Gibson has done it the right and righteous way, more or less. And an enormous stroke of luck didn't hurt either.

His first novel, *Neuromancer*, the one that made his reputation, was modestly published as an Ace paperback original SF novel, though its quality deserved better. That *Neuromancer* was a fine and worthy debut and then some and why, does not need reiteration here and now, since I went into it at length at the time in these very same pages. Its effect within the genre was well-deserved and probably inevitable.

The transformation of Cyber-

punk and its creator into mass cultural icons was not. The story is so improbable that one Hollywood studio that got the eight-page Cabana Boys press release on the film project for *Neuromancer* thought it was a proposal for a situation comedy and tried to put it into development.

Two cabana boys at the Beverly Hills Hotel luck into several hundred thou of film financing thanks to their coziness with the daughter of the economic principal. They want to do a sequel to *Buckaroo Banzai*, but the rights are unavailable, so they turn to *Neuromancer* instead. They buy the film rights for \$100,000, and then proceed to spend \$200,000 or so on professional PR to make the novel, the author, and Cyberpunk bankable.

The film project went nowhere, but the same could not be said for the fame of Cyberpunk and William Gibson.

Gibson's next two novels, *Count Zero* and *Mona Lisa Overdrive*, were sequels to *Neuromancer* in the same Cyberpunk vein, after which he collaborated with Bruce Sterling on a steampunk opus, *The Difference Engine*. So the question began to arise as to whether Gibson would turn into a one-trick pony, destined to cash in forever on the mode and schtick that made his fame and fortune.

Virtual Light, fortunately, answers that question in the negative.

Is this science fiction novel that grazed the bottom of the bestseller lists another ground-breaking masterpiece like *Neuromancer*? No. Is it yet another Cyberpunk sequel? No.

It is a good novel that displays most of what one would have considered Gibson's characteristic strengths plus two new ones, a transitional novel, one has reason to hope.

The plot as such isn't much. San Francisco bicycle messenger Chevette Washington steals a pair of special glasses encoding images of interest to various heavies in the virtual light that justifies the neat title and the even neater cover, and the chase is on, as they, and various of their minions, including down-on-his-luck ex-cop Berry Rydell, chase the purloined shades and Chevette round and about Gibson's future San Francisco and Southern California.

This is not the future of the Neuromancer cycle, though it shares certain characteristics in the cyber this and that, and some of what makes the novel work as well as it does is indeed familiar.

Gibson's world, while not exactly logical or all that plausible, is finely rendered and marvelously realized, the marvel of the realization being achieved via Gibson's by now characteristic eye for telling physical detail, mantric employment of brand names, and uncanny ability to render novel sensory images in terms of other familiar ones, i.e., "... this lopsided pyramid the color of a Noxema jar."

Gibson's previous three novels were intricately plotted and formally quite complex, so if you were to suppose that his usual fine rendering of the phenomenological surface would not be enough to carry the simple plot and chase structure of *Virtual Light*, you would be right.

But *Virtual Light*, while no conceptual breakthrough, shows that Gibson has grown as a writer, in at least two respects.

For one thing, while not quite farce, the book is *funny*, something Gibson has not been at book length before. Here, for the first time, Gibson's sharp urban wit and post-modern jaundiced eye turn openly ironic, and the result is a kind of dry sophisticated humorous touch that, while it does not violate the realistic surface of the science fictional reality, nor produce belly laughs, gives everything a pleasantly witty edge.

And for another, and perhaps more significant for the future, the thing that keeps *Virtual Light* from devolving into farce is that this is much more a novel of character than anything Gibson has done before. For the first time, one feels that Gibson has a true affection for his characters; the characterization may not be deep, and neither are the characters, but it is *warm*. You care for these people more than you have cared for the personages in Gibson's previous work, and, you feel, so does he.

Talent and skill were what made William Gibson a major science fiction writer with his first novel. Terrific luck in the form of beaucoup bucks toward the professional realization of that end now appears to have broken him out of the limits of the SF ghetto.

So perhaps it is only natural that those of us who believe we have a prince's share of the former but a pauper's portion of the latter succumb to the sin of envy. But before we do, let us ponder the use to which William Gibson has put his

good fortune.

Just when it seemed that his work might degenerate into a mannered exploitation of the mode and material which made him a star, he essays a movement toward a new beginning. Just as one begins to fear that he may be content to cash in on Cyberpunk forever, he takes a step sideways. Just as it seems as if he might be starting to just go through the motions, he develops an ironic sense of humor and deepens his emotional connection to his characters. Just as it seems as if commercial success is about to ossify his style into mannerism, he shows that he is developing it as a more generalized instrument.

While luck may have had more to do with Gibson's commercial transcendence of the SF genre than talent, the talent is there, nor has Gibson betrayed it. Envy of his success in the sense of wishing it was one's own is understandable; begrudging him it as undeserved would only be mean-spirited. The distinction is morally important.

It takes nothing away from William Gibson to say, for example, that, on the literary record, Algis Budrys is at least his equal as a writer, and that *Hard Landing*, his first novel in over fifteen years, is a literary event that deserved better than the paperback original publication it has received.

But Budrys not only lacked the luck of Gibson, he had, in a certain sense, the misfortune to be born long before his proper time, beginning his career as a science fiction writer in the 1950s, when such publication was the norm and glad to get it, and when writers with the

ambition to attempt work as literarily sophisticated as *Who?* and *Rogue Moon* and Budrys's fine novelettes and novellas, let alone the level of talent, craftsmanship, and maturity to pull it off, were few and far between within the SF genre and the possibility of pulling a Gibson and transcending genre while still writing science fiction virtually non-existent.

So the literary triumph of *Rogue Moon* brought Budrys little non-genre fame and probably less fortune, and he drifted away from fiction for nearly a decade, published a paperback original or two in the late 1960s, fell more or less silent again, and returned in 1977 with a hardcover science fiction novel, *Michaelmas*, a novel of media manipulation more than good enough to have propelled him into the front ranks, which somehow didn't.

What if the film made of *Who?* had been a blockbuster? What if *Rogue Moon* or *Michaelmas* had chanced to receive major mainstream critical attention? What if there had existed in the 1950s, '60s, and '70s, an editorial, commercial, and critical infrastructure to nurture a talent like Budrys toward his full literary maturity? What would he have produced over the last three decades under such conditions?

Quien sabe? Quelle dommage. We will never know.

But what we do have now is a certain cause for some modest celebration in the form of a new Budrys novel after all these years—well, sort of. It might be more accurate and less conducive to false expectations to describe *Hard Landing* as a long novella rather

than a short novel.

As such, it is on a par with Budrys's previous work at that length, arguably his natural metier. An alien spaceship crashes in New Jersey, the four survivors are permanently stranded on Earth, and must live out the rest of their lives as humans.

While this is not exactly a ground-breaking concept, *Hard Landing* is formally quite complex, being rendered in a series of shifting viewpoints—the aliens themselves, documents, Budrys himself narrating as if this were nonfiction and he a kind of journalist ferreting out little tidbits.

The story spans decades, and what makes it stand out from other such tales, aside from the formal complexity, is the reality level of the characterization, and also of the various local and temporal ambiances—Chicago, its suburbs, the New Jersey marshes, and so forth.

Then too, perhaps Budrys's lack of vast commercial success has contributed to one of his cardinal virtues. Here, he at least appears to be intimately familiar with the details of various lines of work, ordinary work which ordinary people (or aliens!) may find themselves doing, and not only renders such details convincingly but gives quotidian work a kind of importance and dignity exceedingly rare in science fiction and not very much in evidence in current American literature, period. One somehow senses the tutelary spirit of Studs Turkel hovering over *Hard Landing*. One somehow senses that Budrys will understand the compliment.

What's a nice kid like you doing wading through the great wad of

schlock that pours in through the mailbox to write these quarterly columns? As a working novelist yourself, wouldn't you rather be able to do all of your reading for pure pleasure? Isn't this a pretty dirty job?

Well yeah, as an author of science fiction myself, the crud that pours in for review and what its copious existence implies can get pretty depressing.

But then you find something like *Hard Landing* buried in the shit-pile with a generic cover indistinguishable from the rest of the incoming avalanche of industry product.

And then you remember that Budrys himself kept at it as a critic of this stuff longer than you have, and on a monthly rather than quarterly basis too.

And so, what the hell, *somebody* has to do it, right, there must be *some* more needles hidden in here, and back you go to the schlockmeister's haystack.

And then, quite unexpectedly, you find another.

What caused me to pick *Forests of the Night*, a first science fiction novel by S. Andrew Swann, out of the stack?

Beats me. I've never heard of the writer, the cover is the usual schlocko paperback package, but somehow, I opened the book and read the first paragraph:

"One day, Nugoya, you're going to screw the wrong person.' Nohar Rajasthan raked his claws across the seat of his booth, wishing it was Nugoya's face. Like the rest of *Zero's*, the vinyl on the seat was flash, shiny, and cheap. The seat shredded."

Great writing? Hardly. But good enough to cause a jaded critic to read the rest of the page. And the next page. And get caught up by the character, the world, and the story.

Nohar is a moreau, a tiger-man whose ancestors were genetically raised to sapience for military purposes, and the world is that of a future Cleveland (yes, *Cleveland*, and convincingly and interestingly rendered and extrapolated too), in which moreaus of various species form the underclass.

Nohar is a private eye (and I guess the concept of a hard-boiled tiger-man dick with attitude established in the early pages was what hooked me) and the story is framed as a mystery, as he is hired to solve the murder of a major politician's campaign manager.

As one might expect in this sort of thing, the mystery is a device for drawing Nohar into the low dives and high places of Swann's future Cleveland, more is involved than a simple murder, there is a cross-species love affair, and so forth. . . .

Is this a great first novel? Not really.

Swann has a lot to learn about the technique of foreshadowing. He gives away his climactic revelation in a heavy-handed way very early on with a far-too-obvious piece of same which leaves you feeling kind of cheated.

Is it literarily ambitious?

You couldn't really say that. Swann writes a clean, sharp, well-paced serviceable prose that does the job without calling attention to itself, and his characters are rendered with just about enough depth to keep them sympathetic

and believable. The concepts are interesting but far from revolutionary. *Forests of the Night* is no *Neuromancer*, and S. Andrew Swann, at this stage of the game, is no William Gibson.

But *Forests of the Night* is a good read, a promising first novel that one hopes against hope will not turn out to be the first in an endless series featuring Nohar the tiger-man detective. And S. Andrew Swann clearly is already a writer with a certain originality of viewpoint and craftsmanlike ability who may end up going nowhere in particular or very far indeed, depending on his inclinations, the acumen and idealism of his editors, and, of course, his luck.

And that is scary.

It is scary because I have no idea why I picked this particular book out of the pile. It is scary because I have no idea how many other novels of a similar level, particularly first novels by writers no one has yet heard of, are hidden in the haystack, nor can I imagine any method of winking them out on a consistent basis.

It is scary because it is precisely the discovery and development of writers like S. Andrew Swann upon which the continued viability of science fiction ultimately depends.

Not so much the starburst geniuses like Gibson who appear now and again and whom it takes no great skill to recognize, but new writers of some promise who need patient intelligent editing, and the attention of a few good readers if they are not to be destroyed and forgotten before they even had a chance by the machineries of the industry. ●

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HOW TO COUNT WORDS: Name and address must be included in counting the number of Words in your ad. Each initial or number counts as 1 word. Mark Holly, 1540 Broadway New York, New York 10036. 5 WORDS. Zip codes are not counted. Phone # 2 Words. P.O. boxes used as keys are charged for City or State count as 1 word each. Garden City, New York, 1 words. Abbreviations such as C.O.D., P.O. Box, and P.O. Box (as 3 words). Webster's International Unabridged Dictionary will be used as our authority for spelling compound words, hyphens, abbreviations, etc. Please make checks payable to Dell Magazines.

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SF CONVENTIONAL CALENDAR

by Erwin S. Strauss

July 4th weekend and the weekend after are big con(vention) weekends this year. Plan now for social weekends with your favorite SF authors, editors, artists, and fellow fans. For a longer, later list, an explanation of cons, a sample of SF folksongs, and info on clubs and fanzines, send me an SASE (addressed, stamped #10 [business] envelope) at Box 3343, Fairfax VA 22038. The hot line is (703) 2SF-DAYS (273-3297). If a machine answers (with a list of the week's cons), leave a message and I'll call back on my nickel. When writing cons, send an SASE. For free listings, tell me of your con 6 months out. Look for me at cons with music keyboard as Filthy Pierre.

JUNE 1994

24-26—**Archon**. For info, write: **Box 50125, Clayton MO 63105**. Or phone: **(314) 326-3026** (10 AM to 10 PM, not collect). Con will be held in: Collinsville IL (if city omitted, same as in address) at the Holiday Inn. Guests will include: fan Eliot (Elst) Weinstein. In its new home across the river.

24-26—**Science Fiction and Fantasy Festival**. (504) 827-0125. New Orleans LA. Over 1000 attend.

25—**TrekCon**. (501) 851-6728. Riverfront Hilton, Little Rock AR. "Next Gen" writer Larry Nemecek.

JULY 1994

1-3—**InConJunction**. (317) 839-5519. Adam's Mark Hotel, Indianapolis IN. Gerrold, Kube-McDowell.

1-3—**Anime Expo**. Marriott, Anaheim CA. S. Frazier, H. Kitazume, H. Mikimoto. Japanese animation.

1-3—**Mutation**. House of Culture, Teplice, Czech Republic. 30 km. from Germany. "Pollution" theme.

1-3—**SF Days**. (+49-234) 46-13-90. Conference Center, Dusseldorf, Germany. K. Kurtz, G. Effinger.

1-4—**WesterCon**. Airport Hilton, Los Angeles CA. G. Martin, R. Musgrave, Rotsler. West's big con.

2-3—**Festival SF**. (514) 931-1815. Holiday Inn, Pointe Claire PQ. DeLancie, M. Barrett. Star Trek.

7-10—**SFRA Annual Meet**, % E. Hull, Harper College, Palatine IL 60067. Hilton, Arlington Hts. IL.

7-10—**Origins**, Box 3100, Kent OH 44240. (800) 529-3976. Convention Center, San Jose CA. Gaming.

8-10—**ReaderCon**, Box 381246, Cambridge MA 02238. (617) 625-6507. Marriott, Worcester MA. LeGuin.

8-10—**Shore Leave**, Box 6809, Towson MD 21285. (410) 821-5563. Marriott in Hunt Valley. Star Trek.

8-10—**StoogeCon**, % Reighter, 10220 Calera Rd., Philadelphia PA 19114. Honoring the Three Stooges.

8-10—**TunnelCon**, % Hix, 1521 Everett, Las Vegas NV 89101. Stardust Hotel. Beauty & Beast TV show.

8-10—**WinkieCon**, % 1083 Euclid Ave., Berkeley CA 94708. (510) 527-4222. Baum's "Oz" books.

9—**Caption**, 25 Hart St., Oxford OX2 6BN, UK. Comics meet at the Oxford Union, in St. Michael's St.

10-22—**Lewis Institute**, % Matson, Box 8008, Redlands CA 92375. (909) 793-0949. Cambridge UK.

13-17—**DragonCon**, Box 47696, Atlanta GA 30362. (404) 925-2813 (rec) or -0115 (days). Multimedia.

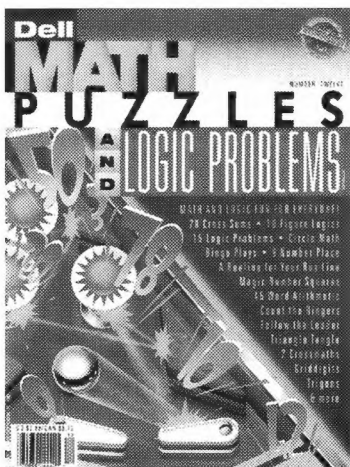
15-17—**GayLaxiCon**, Box 127, Brookline MA 02146. Holiday, Rockville MD. For gays & their friends.

SEPTEMBER 1994

1-5—**ConAdian**, Box 2430, Winnipeg MB R3C 4A7. (204) 942-9494. WorldCon. \$125/C\$165 to 7/15.

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